



AIR03 - Montana Supplement

Replace Burning of Pruning's, Removals and Other Crop Residues with Non-Burning Alternatives (Chipping, Grinding, Shredding, Mowing or Composting) - (Air Quality Enhancement Activity)

Montana Clarification

By replacing burning with alternatives, harmful air emissions will be greatly reduced, and the resulting materials usually can be used as much elsewhere on the farm, or sold as much to outside customers.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Acres of orchard, vineyards and other perennial woody crops where burning is currently used.

Documentation Requirements

1. A map showing farm areas where these activities were conducted and applied.
2. Dates, locations and type of non-burning alternatives used.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



AIR04 - Montana Supplement

Use Drift Reducing Nozzles, Low Pressures, Lower Boom Height, and Adjuvants to Reduce Pesticide Drift – (Air Quality Enhancement Activity)

Montana Clarification

This enhancement is limited to operations that currently do not have equipment that is capable of meeting three of the four criteria listed. Three of the four criteria listed must be implemented to qualify for this enhancement. Example: producer installs shields on sprayer, reduces sprayer pressure and uses spray adjuvants to reduce spray drift.

National Activity #4 **Montana requirements if chosen:**

- The label must specify that the adjuvant(s) are drift control additives and not surfactants, wetting agents, spreaders or stickers and must be approved for the specific pesticide being used.
- Consult local pesticide extension agent/specialist for specific adjuvants.
- Adjuvants should be used on all applied acres unless there is not an approved drift control additive for the specific **crop**/pesticide being applied.

Additional References for Montana

1. “Selecting Drift Reduction Nozzles”, Jim Wilson, SDSU. John Nowatzki and Vern Hofman, NDSU. <http://www.pesticides.montana.edu/Reference/SelectingNozzels.pdf>
2. “Reducing Spray Drift “, Publication AE -1210 June 2001, North Dakota State University, Vern Hofman and Elton Solseng. <http://www.ag.ndsu.edu/pubs/ageng/machine/ae1210w.htm>

Montana Specifications

Those described in the national enhancement and those listed under Montana Clarification.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS field office

Eligible Land

Cropland and pastureland

Applicable Amount

Acres of crop or pasture

Documentation Requirements

Montana Documentation Requirements

1. Documentation for each year of this enhancement describing these items, where applicable:
 - a. Written documentation for the type(s) of drift reduction technology adopted
 - a. Type and brand of nozzles **or other drift control technology used.**
 - b. **Current and reduced spray pressure and crops sprayed.**
 - c. **Name(s) of “drift control” adjuvant used and crop(s) sprayed.**
 - d. **Crop canopy and boom height(s) for applied acres.**
 - b. Acres treated
2. Documentation for **current** or previous system used describing these items, where applicable.
 - a. Written documentation for current spray or drift reduction technology being used.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



AIR07 - Montana Supplement

GPS, Targeted Spray Application (Smart Sprayer), or Other Chemical Application Electronic Control Technology – (Air Quality Enhancement Activity)

Montana Clarification

This enhancement requires real time weather data, with weather data and targeted spray information recorded on a data logger for documenting weather factors that affect drift. Entering weather information from a ground weather station into a data logger is not sufficient documentation for this enhancement. The units needs to be within ½ mile of the spraying activity

Please talk to your local NRCS office for acceptable units. The NRCS area office has been provided the information.

Montana Specifications

To qualify for this enhancement, the participant must include the use of a GPS data logger that provides real-time documentation to meet all label requirements for drift mitigation; this includes documentation of wind direction and speed, temperature, and relative humidity. All label directions and requirements must be followed.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture, range and forest

Applicable Amount

Acres of crop, pasture, range or forestland

Documentation Requirements

Each year the following must be supplied:

1. Type of electronic control technology used, **must be one of the six techniques listed under “Criteria” in National Enhancement.**
2. Dates technology is used, and
3. Acres treated.
4. Type and brand of data logger used.
5. Written documentation of the type of spray application technology currently being used.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



AIR08 Montana Supplement

Nitrification Inhibitors or urease inhibitors – (Air Quality Enhancement Activity)

Montana Clarification

Producer must have a current soil test (no more than 12 months old). All nitrogen fertilizer applied within thirty days of planting except for starter fertilizer must be a nitrification inhibitor or urease inhibitor product.

Nitrogen Fertilizer Stabilizers and Inhibitors ⁽¹⁾ (This may not be a complete list as new products and formulations are being developed. **Landowners will check with the field office before substitutions are made).**

Approved Chemicals

2-chloro-6(trichloromethyl) pyridine (Nitrapyrin)
Dicyandiamide (DCD)
Ammonium thiosulfate
N-butyl-thiophosphoric triamide (NBPT)
NBPT + DCD

Affected Process

Nitrification
Nitrification
Nitrification, Volatilization
Volatilization
Nitrification, Volatilization

⁽¹⁾ “Enhanced Efficiency Fertilizers” – “Stabilizers and inhibitors” section of Appendix table on page 12 of, Montana State University Extension Publication EB0188 reprinted June 2011.

Montana Specifications

All fertilizer guidelines and special conditions in “Fertilizer Guidelines for Montana Crops” Montana State University Extension Service Publication # EB 161⁽¹⁾ should be followed.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Acres of annually cropped land or pastureland.

Documentation Requirements

1. A map showing where the activities are applied,
2. Date(s) of application and application rates of fertilizer with inhibitor for each treatment area,
3. Acres of land treated,

4. Soil test results, **current soil test no more than 12 months old**
5. Manure analysis results (where applicable),
6. Crops grown and yields (both yield goals and measured yield), and
7. Calibration of application equipment.
8. Nitrification or urease inhibitor product.

Montana References

- (1) **“Fertilizer Guidelines for Montana Crops” Montana State University Extension Service Publication # EB 161⁽¹⁾** March 2005, Jeff Jacobsen, Grant Jackson and Clain Jones. Website: <http://www.msuextension.org/store/Departments/Agriculture-Topic-Categories/Fertilizers.aspx?sortorder=1&page=8>
- (2) **“Enhanced Efficiency Fertilizers” Montana State University Extension Publication EB0188** reprinted June 2011, Kathrin Olson-Rutz, Clain Jones and Courtney Pariera Dinkins. Web site: <http://www.msuextension.org/store/Departments/Agriculture-Topic-Categories/Fertilizers.aspx>

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM03 - Montana Supplement

Incorporate Native Grasses and/or Legumes to 15% or More of Herbage Dry Matter Productivity – (Animal Enhancement Activity)

Montana Clarification

Because interseeding isn't successful in Montana, this enhancement will involve a pasture renovation. To meet the "15 percent of forage acres" requirement requires that 15 percent of the present non native pasture acres would have to be reseeded to a native species mix.

Montana Specifications

1. A firm weed-free seedbed will be prepared on the site (if additional information is needed to prepare a weed-free seedbed, contact your local NRCS office for a copy of Technical Note MT-58). There will be no interseeding.

2. Adapted species will be used. Seeding rates listed are Pure Live Seed (PLS) for a full seeding. For mixtures, multiply the seeding rate by the percentage of the species in the mix. For additional information on adapted species and mixes for Montana, contact your local NRCS office for a copy of Montana Plant Materials Technical Note MT-46. For additional information on calculating seed mixes and reading seed packaging labels, contact your local NRCS office for a copy of Montana Plant Materials Technical Note MT-38.

| Adapted Species <small>Taken from MT-46</small> | Seeding rates (lbs PLS/Ac) | Seeding Dates |
|---|---|----------------------|
| Big bluegrass | 2 | Fall/Spring |
| Sandbergs bluegrass | 2 | Fall/Spring |
| Big bluestem | 6 | May |
| Little bluestem | 4 | May |
| Indian ricegrass | 6 | Fall |
| Needleandthread | 6 | Fall |
| Green needlegrass | 5 | Fall |
| Switchgrass | 3 | May |
| Basin wildrye | 6 | Spring |
| Beardless wheatgrass | 6 | Fall/spring |
| Bluebunch wheatgrass | 6 | Fall/spring |
| Slender wheatgrass* | 6 | Fall/spring |
| Thickspike wheatgrass | 6 | Fall/spring |
| Streambank wheatgrass | 5 | Fall/spring |
| Western wheatgrass | 8 | Fall/spring |
| Purple prairieclover | 3 | Fall/spring |
| White prairieclover | 3 | Fall/spring |
| Alfalfa** | 5 | Spring |
| Birdsfoot Trefoil | 3 | Spring |

| | | |
|---------|----|--------|
| Sanfoin | 34 | Spring |
|---------|----|--------|

* Slender wheatgrass will not make up more than 10% of a seed mix.

**Non-native legumes will not make up more than 10% of the seed mix.

3. Legume seed will be inoculated with the appropriate species of rhizobium.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pastureland

Applicable Amount

Total acres of pastureland that do not have a mixed stand of native grass and/or legumes.

Documentation Requirements

A written planting specifications plan identifying:

1. Plant species to be seeded
2. Seeding rates and dates
3. Site preparations and planting method
4. Amounts of fertilizer and lime to be applied
5. Map showing locations where seeding activity is applied.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

 Contract participant

 Date



ANM05 - Montana Supplement

Extending Riparian Forest Buffers for Water Quality Protection and Wildlife Habitat – (Animal Enhancement Activity)

Montana Clarification

This enhancement is available to widen an existing riparian forest buffer that already meets NRCS standards and averages a minimum of 35 feet wide. If the existing width is variable, the planner will use the average width. Where field boundaries prohibit extending the buffer to 60 feet, the planner may GPS the existing riparian forest buffer boundary and the proposed location of the boundary, import this information into Toolkit and determine the area.

To determine actual area to be added, subtract the existing riparian forest buffer width from 60 feet. Multiply this value by the length of the buffer and divide by 43560 to determine acreage.

For additional information on planning riparian forest buffers contact your local NRCS field office and request a copy of MT-391 Riparian Forest Buffer.

Montana Specifications

The Montana minimum width for an existing riparian forest buffer for ANM05 is 35 feet; the existing riparian forest buffer (that meets NRCS standards) **MUST** be extended an additional 25 feet to meet the 60 feet minimum width to qualify for this enhancement.

List of suitable trees and shrubs:

| COMMON NAME | SCIENTIFIC NAME |
|------------------------|------------------------------|
| TREE (CONIFER) | |
| Engelmann Spruce | <i>Picea engelmannii</i> |
| White Spruce | <i>Picea glauca</i> |
| Subalpine Fir | <i>Abies lasiocarpa</i> |
| Western Redcedar | <i>Thuja plicata</i> |
| Ponderosa Pine | <i>Pinus ponderosa</i> |
| Douglas Fir | <i>Pseudotsuga menziesii</i> |
| Western Larch | <i>Larix occidentalis</i> |
| Grand Fir | <i>Abies grandis</i> |
| Rocky Mountain Juniper | <i>Juniperus scopulorum</i> |

| COMMON NAME | SCIENTIFIC NAME |
|-------------------------|-------------------------------|
| TREE (DECIDUOUS) | |
| Plains Cottonwood | <i>Populus sargentii</i> |
| Black Cottonwood | <i>Populus trichocarpa</i> |
| Narrowleaf Cottonwood | <i>Populus angustifolia</i> |
| Green Ash | <i>Fraxinus pennsylvanica</i> |
| Black Hawthorne | <i>Crataegus douglasii</i> |
| Mountain Maple | <i>Acer glabrum</i> |
| Quaking Aspen | <i>Populus tremuloides</i> |
| Water Birch | <i>Betula occidentalis</i> |
| Thinleaved Alder | <i>Alnus incana</i> |
| Boxelder | <i>Acer negundo</i> |

| COMMON NAME | SCIENTIFIC NAME |
|---------------------|------------------------------|
| SHRUB | |
| American Plum | <i>Prunus americana</i> |
| Native Willows | <i>Salix</i> spp. |
| Big Sagebrush | <i>Artemisia tridentata</i> |
| Silver Sagebrush | <i>Artemisia cana</i> |
| Blue Elderberry | <i>Sambucus coerulea</i> |
| Skunkbush Sumac | <i>Rhus trilobata</i> |
| Common Chokecherry | <i>Prunus virginiana</i> |
| Redosier Dogwood | <i>Cornus sericea</i> |
| Silver Buffaloberry | <i>Sherpherdia argentea</i> |
| Common Snowberry | <i>Symphoricarpos albus</i> |
| Wood's Rose | <i>Rosa woodsii</i> |
| Serviceberry | <i>Amelanchier alnifolia</i> |
| Golden Currant | <i>Ribes aureum</i> |
| Silverberry | <i>Elaeagnus commutata</i> |

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture and rangeland

Applicable Amount

Applies to only those acres of existing riparian forest buffer(s) on crop, pasture, or rangeland.

Documentation Requirements

1. A map showing the location and size of enhanced riparian forest buffers.
2. Documentation of the type and rates of vegetation planted in the new riparian forest buffers.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM07 - Montana Supplement

Extend Existing Field Borders for Water Quality Protection and Wildlife Habitat – (Animal Enhancement Activity)

Montana Clarification

This enhancement is to widen an existing field border that currently meets the Montana standard for a field border (MT-386). This includes adequate, height, density and vigor of vegetation and an average width of 30 feet (water quality is the resource concern). Where field boundaries prohibit extending the field border to 60 feet, the planner may GPS the existing field border boundary and the proposed location of the boundary, import this information into Toolkit and determine the area.

Montana Specifications

The Montana minimum width for an existing field border is 30 feet; the existing field border (that meets NRCS standards) would need to be extended an additional 30 feet to meet the 60 feet minimum width to qualify for this enhancement.

RUSLE2 filter strip calculations will not be required for this enhancement.

The following species and species groups are suitable for extending existing filter strips for water quality protection and wildlife habitat:

1. Wheatgrasses: Tall, intermediate, pubescent, slender, thickspike, western and bluebunch.
2. Wildryes: Basin, beardless.
3. Native forbs such as Maximillian sunflower, purple and white prairie clover.
4. American vetch.
5. Small burnet.
6. All grass species listed in Table 1 below, Specification MT 393, Filter Strip.
7. **All shrubs species listed in Field Office Technical Guide (FOTG) Section II, Conservation Tree/Shrub Suitability Group (CTSG) and adapted to the CTSG and plant adaptation zones for your specific location.**

Table 1. Grass and Legume Species Characteristics and Adaptability.

| Species | Moisure Range of Adaptability (inches) | Soil Protection and Cover ^{1/} | | |
|--------------------------|--|---|----------------|-------------------------------|
| | | Riparian Areas | Critical Areas | Nitrogen Uptake ^{2/} |
| Bromegrass, Smooth | 12+ | Y | Y | H |
| Bromegrass, Mountain | 14-20 | N | Y | M |
| Canarygrass, Reed | 15+ | Y | N | H |
| Foxtail, Creeping | 18+ | Y | N | H |
| Needlegrass, Green | 12-18 | N | Y | L |
| Orchardgrass | 15+ | N | Y | M |
| Timothy | 15+ | N | Y | M |
| Wheatgrass, Crested | 10-18 | N | Y | H |
| Wheatgrass, Intermediate | 13-22 | N | Y | H |
| Wheatgrass, Pubescent | 12-20 | N | Y | H |
| Wheatgrass, Siberian | 10-18 | N | Y | L |
| Wheatgrass, Slender | 12-20 | N | Y | M |
| Wheatgrass, Thickspike | 10-18 | Y | Y | L |
| Wheatgrass, Streambank | 8-18 | Y | Y | L |
| Alfalfa | 12+ | N | Y | M |
| Clover, Alsike | 16+ | N | Y | M |
| Clover, Ladino | 16+ | N | Y | M |
| Clover, White | 14+ | N | Y | M |
| Sweetclover | 10+ | N | Y | L |
| Trefoil, Birdsfoot | 14+ | N | Y | L |
| Milkvetch, Cicer | 14+ | N | Y | M |
| Fescue, Hard | 14-20 | N | Y | M |
| Grama, Blue | 10-18 | N | Y | L |
| Ricegrass, Indian | 10-18 | N | Y | L |
| Needle and Thread | 10-18 | N | Y | L |
| Saltgrass, Inland | 15+ | Y | Y | L |

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop and pastureland

Applicable Amount

Only applies to acres of existing field borders on crop or pasture land types.

Documentation Requirements

1. A map showing the location and size of enhanced field borders.
2. Documentation of the type and rates of vegetation planted in the new field borders.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM09 - Montana Supplement

Grazing Management to Improve Wildlife Habitat – (Animal Enhancement Activity)

Montana Clarification

Beginning with this contract (a new activity), one third of the grazing land must be deferred each year to provide adequate residue for nesting and fawning cover. The same unit of land (or same 1/3 of grazing land) can be deferred 2 or more consecutive years if the grazing strategy is showing changing season of use and providing rest and recovery in all pastures. Documentation would include a prescriptive grazing plan and the associated grazing records.

Montana Specifications

One third of grazing land must be deferred from grazing during the nesting/fawning season each year. These dates in Montana are:

Nesting and fawning dates: April 15 through August 1.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pasture, range and forest

Applicable Amount

Applies to all pasture (including silvopasture), range, or forest land types

Documentation Requirements

1. A schedule of when grazing activities occurred documenting that grazing activities were deferred on a minimum of 33% of the available acreage.
2. Map showing acreage where these activities are applied.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM10 - Montana Supplement

Harvest Hay in a Manner That Allows Wildlife to Flush and Escape – (Animal Enhancement Activity)

Montana Clarification

This enhancement is only applicable to any land that is hayed (permanent hay or annual hay such as hay barley).

Montana Specifications:

Producers must choose either the National Criteria A (defer Haying) OR National Criteria B (haying conducted during nesting/fawning period). Depending on that choice – the producer needs to follow the management practices under Criteria A or B but not a combination

For Criteria A:

- Fawning and nesting dates for Montana are April 15 through August 1.
- Minimum cutting height is 6 inches for tall, slender, pubescent, intermediate, and bluebunch wheatgrass, beardless and altai wildrye, switchgrass, and reed canarygrass.
- Minimum cutting height is 8 inches for basin wildrye.
- Minimum cutting height for alfalfa is 3 inches and 4 inches for grass.

OR

For Criteria B:

- Flush bar should be at least seven feet in front of the cutter blades. The vertical flushing devices (chains, metal bars, etc.) should be spaced 1.5 feet apart and extend downward into the alfalfa/hay.
- If average speed is greater than 6 mph, the flush bar should be moved farther ahead and noise makers, such as bells should be added.
- All haying will be done during daylight hours.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS field office

Eligible Land

Cropland

Applicable Amount

Only applies to any annually planted or perennial hayland acres (a subset of cropland)

Documentation Requirements

1. Map showing the fields that were treated
2. Criteria A – A picture showing residual heights of hay after mowing, hay acres idled and cutting dates. **OR**
3. Criteria B – A picture showing the flush bar attachment on the tractor or swather, time of day hay field was mowed, and haying pattern used.



I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM17 - Montana Supplement

Monitoring Nutritional Status of Livestock Using the NUTBAL PRO System – (Animal Enhancement Activity)

Montana Clarification

Information on the NUTBAL PRO system can be found at http://cnrit.tamu.edu/ganlab/GANlab_webpage_files/nutbalpro.htm

An example copy of the NUTBAL PRO cover sheet is found on page 2 of this enhancement.

Montana Specifications

A minimum of 6 forage analysis per year per herd is required. If the herd grazes on both pasture and rangeland throughout the year, samples must be taken from both (i.e. 3 from pasture grazing and 3 from rangeland grazing).

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pasture and rangeland

Applicable Amount

Acres of pasture and range

Documentation Requirements

For each forage sample collected for analysis:

- A copy of the forage analysis report.
- A copy of the NUTBAL PRO reports generated from the decision support software.
- Written documentation of the immediate management decisions made as a result of the analysis and/or the building of a seasonal forage quality curve to be used for future management decisions.
- Include a copy of the cover page from the report (NUTBAL PRO system).

Example Report you can use with clients participating in the NIRS/NUTBAL program for the first time.

STANDARD BALANCE REPORT

Case Information

Ranch Name: Really Risky Ranch
 Herd: Angus Cows
 Profile Name: Mature Angus Cows
 Profile Date: 07/10/2000
 Case Name: 12345
 Case Description: July Sample
 Vegetation: Native Range
 Pasture ID: cp-3-8-13
 Animal Kind: CATTLE
 Animal Class: COW 60-? MONTHS
 Breedtype: Angus FS 3.4 (Really Risky Ranch)
 Standard Ref. Wt. (lbs): 1059.630
 Current Weight (lbs): 984.500
 Current Body Condition: 4.00
 Days Lactating: 72
 Days Pregnant: 0

| <u>Nutritional Status</u> | <u>Intake</u> | <u>Requirement</u> | <u>Balance</u> |
|---------------------------|---------------|--------------------|----------------|
| Crude Protein | 2.463 | 2.191 | 0.272 |
| NEm (Mcal/day) | 20.677 | 16.099 | 4.578 |
| NEg (Mcal/day) | 2.806 | 0.000 | 2.806 |

Performance

Weight Performance goal in lbs/day: 0.0000
 Estimated weight change in lbs/day: 1.18
 Estimated body condition in 30 days: 4.51
 Performance Limited By: CRUDE PROTEIN

| <u>Dry Matter Intake</u> | <u>lbs</u> | <u>%Std. Ref. Wt.</u> | <u>AUE</u> |
|--------------------------|---------------|-----------------------|--------------|
| Concentrates | 0.000 | 0.000 | 0.000 |
| Roughage: | 0.000 | 0.000 | 0.000 |
| Forage: | 29.605 | 27.94 | 1.139 |
| Sub Total: | 29.605 | 2.794 | 1.139 |
| Calf DM/d: | 1.967 | | 0.076 |
| Total: | 31.572 | 2.794 | 1.215 |

| <u>Diet Quality</u> | <u>Overall</u> | <u>Forage</u> |
|----------------------|----------------|---------------|
| CP consumption (%): | 8.32 | 8.32 |
| DOM consumption (%): | 63.86 | 63.86 |
| DOM/CP ratio: | 7.68 | 7.68 |

| <u>Milk</u> | <u>Fecal</u> |
|---|--------------------------|
| Potential Milk Production (lb/d): (lb/day): 9.7540 | 12.75 |
| Actual Milk Production (lb/d): 0.0244 | 12.75 |
| | Estimated Fecal Output |
| | Fecal P Output (lb/day): |

Fecal N Output (lb/day): 0.1151

Please see next page for comments.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract Participant

Date



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Stewardship Program
2013 Ranking Period 1

ANM18 - Montana Supplement

Retrofit Watering Facility for Wildlife Escape - (Animal Enhancement Activity)

Montana Clarification

Watering Facility (MT-614) states that a grippable long lasting material is adequate when selecting escape ramps. Painting and coating are not required. Montana will not require more than 2 ramps per tank.

Montana Specifications

- An 8 to 10 foot diameter tank would require one ramp.
- Tanks greater than 10 foot diameter would require two ramps.
- Montana will not require more than 2 ramps per tank.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture and rangeland

Applicable Amount

Number of existing water facilities. (Do not count enclosed winter waterers.)

Documentation Requirements

Producer will provide a date stamped photograph that clearly shows properly installed escape/access device for each water facility.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM21- Montana Supplement

Prairie Restoration For Grazing and Wildlife Habitat – (Animal Enhancement Activity)

Montana Clarification

NRCS will assist contract holder in designing the seeding plan. Reseeding of native range is **NOT** allowed.

Montana Specifications

Nesting and fawning dates are April 15 through August 1.

Seeding or planting mixtures for this enhancement will be determined by the local NRCS Field Office using the appropriate Ecological Site Description(s) for the acres to be restored. Seeding rates will be determined using **Range and Pasture Technical Note MT-33**, and **Plant Materials Technical Note MT-46**. At least three species of *native* grasses, two species of *native* forbs and one *native* shrub species (if appropriate for the ecological site) will be seeded or planted.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS field office

Eligible Land

Crop, pasture and range

Applicable Amount

Applies to sites that have soils that indicate it was once a prairie or can sustain native prairie species.

Documentation Requirements

Following implementation of this activity, the landowner must document the restoration of native vegetation by a brief written description of the actions taken; providing receipts, seed tags, and dates; documenting the areas (acres) restored, grazing management plan, and delineating the location of the restored prairie on a map or aerial photo.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM25 - Montana Supplement

Stockpiling of Forages to Extend the Grazing Season – (Animal Enhancement Activity)

Montana Clarification

On pastureland (lands that have been broken and reseeded to other grasses and/or grass/legume mixes), pasture forage is deferred from grazing **during the growing season (except for a portion of the growing season for irrigated pastures)** and flash grazed in strips or rotation later. The intent is to extend the grazing season and not use as much hay.

This enhancement is for pastureland that will not be grazed during the growing season. A prescribed grazing plan **following NRCS 528 Prescribed Grazing Standards and Specifications needs to be applied on the entire operation.**

Montana Specifications:

- **Grazing of stockpiled forages can occur between October 15th through April 1st of the next year.**
- **Dryland pastures that will be stockpiled and grazed after October 14th need to be deferred through October 14th of the same year.**
- **Irrigated pastures that will be stockpiled and grazed after October 14th need to be deferred from August 1st through October 14th of the same year.**

The national enhancement specifies that livestock must be rotated into a new stockpiled paddock every 1-3 days. Due to the sizes of operations in Montana, Montana will allow paddocks of sufficient size to be grazed 5-7 days – not to exceed 7 days.

For intensive grazing using electric fences, utilization rates will be calculated to use 50% of current year growth in spring or 65% for fall or winter.

Stockpiled acreage may be fertilized for the specific pastures/plant communities.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pasture

Applicable Amount

Acres of pasture land

Documentation Requirements

1. **A copy of the operation's prescribed grazing plan following NRCS 528 Standards and Specifications.**
2. Specified stockpiled acres designated on a map and in the prescribed grazing plan
3. Photographs showing stockpiled forage for each such pasture

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM26 - Montana Supplement

Managing Calving to Coincide with Forage Availability – (Animal Enhancement Activity)

Montana Clarification

None

Montana Specifications

In order to meet the requirements of this enhancement the contract holder must move his calving season from predominantly a winter calving period to a spring calving period. The calving season must start April 1 or later to meet this requirement **for ALL livestock on the operation.** **A minimum of 30 days change in calving dates is required.**

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS field office

Eligible Land

Pasture or rangeland

Applicable Amount

Acres of pasture or rangeland

Documentation Requirements

Document annually by herd the:

1. Percentage of breeding females with a projected calving date that falls within the established calving period
2. Number of calf births occurring between the desired start and end dates
3. Dominant forage type grazed
4. Acres of available pasture

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM27 - Montana Supplement

Wildlife Friendly Fencing - (Animal Enhancement Activity)

Montana Clarification

Improve passage: Follow NRCS Montana Conservation Practice Specification 382-Fence, for this Enhancement (see Specifications, below). For full implementation of this enhancement, a MINIMUM of 20% on the operation must be made wildlife friendly.

NOTE: Montana NRCS will use common understandings such as “Rule of the Right” in eastern Montana or not include public fences where the participant has no control over fence modification to determine applicable length of fence.

Improve visibility: Increase visibility of all new fences in identified sage grouse areas that are within ¼ mile of a lek or key wintering areas using vinyl markers.

Montana Specifications

TABLE 9. Fence Height and Spacing Requirements

| INTENDED USE | FENCE HEIGHT |
|---|--|
| Domestic livestock control with big game consideration. | Maximum height of 42 inches (+ or - 2 inches) for the top wire. Wire spacing of the top two line wires shall be a minimum of 10 inches apart at the post location. Bottom wire will be a minimum of 14 inches from the ground; 16 inches for antelope (see below for additional considerations for wildlife). |
| Domestic livestock control with big game consideration where the top wire exceeds 44 inches, but is not greater than 48 inches. | If wire height exceeds 44 inches, the distance between the top wire and the second wire will be at least 12” and provisions must be made at identified crossings for wildlife movement; both over and under the fence. These areas will not exceed 1/4-mile apart and there must be a minimum of one per fence. The fence in these designated crossing locations will not exceed 42 inches at the top wire and must include a minimum of one of the alternatives listed below to allow for wildlife movement (*see Common Alternatives below). Also see ***Special Use Only for a bison fence that exceeds the intended use. |

***Common Alternatives.**

- Smooth wire on top and/or bottom, top wire tied down between two posts, bottom wire tied up between two posts,
- PVC on top wire for entire length between two posts; raise bottom wire in that stretch, lower top wire in that stretch,

- Wood rail at top wire between two posts maximum 38 inches high (38-inch elk jump),
- Cattle guard for antelope, 5. Extra stays so top and second wire will not cross, etc.). Minimum distance for chosen wildlife crossing is that distance between two posts or 1 rod (16.5 feet), whichever is greater.
- Extra stays so top and second wire will not cross, etc.). Minimum distance for chosen wildlife crossing is that distance between two posts or 1 rod (16.5 feet), whichever is greater.

EXAMPLES OF ACCEPTABLE COMMON WIRE SPACING

1. 3-Wire Cattle: 16", 29", 42"
2. 3-Wire Cattle: 14", 28", 42"
3. 4-Wire Cattle: 14", 22", 32", 42"
4. 4-Wire Cattle with Antelope: 16", 24", 32", 42"
5. 5-Wire Sheep: 5", 11", 18", 26", 36" (need something for Antelope)**
6. 5-Wire Cattle and Sheep: 8", 16", 24", 32", 42"; or 5", 11", 18", 28", 42" (Need access for Antelope)**
7. 7-Wire Cattle and Sheep: 3", 7", 11", 16", 26", 36", 44" (Need access for Antelope)**
8. Deer enclosure: See power and/or woven wire fence
9. Elk: See power and/or woven wire fence
10. Bison: *** Special Use only -- 10", 20", 26", 34", 40", 48", 56", 64" or 16", 25", 34", 45", 56", 68" with Antelope present (See Power Fence for other alternatives).
11. Grizzly and Wolf Predator: See power and or woven wire fence.

****Sheep fences** should incorporate "cattle guards" designed for Antelope movement through the fence (see drawing at <http://www.mt.nrcs.usda.gov/technical/eng/drawings.html>); have gates no taller than 36 inches so Antelope can jump over or any other means to allow control of the sheep while allowing Antelope movement across fences. Young of year have the most difficulty jumping fences and/or jumping cattle guards. Leave gates open at the end of the grazing period to accommodate all Antelope movement.

SPECIAL CONSIDERATIONS FOR FENCES IN SAGE GROUSE HABITAT

- Fencing near leks (dancing grounds) will be avoided – no closer than 1,000 feet.
- Fences on the crest of low-lying hills may be a problem when located in high sage grouse use areas or near leks as grouse fly to display grounds before sunrise making them more vulnerable for collisions.
- Flat-topped wood posts provide raptor perch sites, consider having post with cone tops (purchase after market).
- Metal posts are preferable to wooden posts as the former discourages raptor perching.
- For segments of fence which are known to have grouse collisions, fence markers or tags that hang from the top wire may help grouse avoid the fence. PVC pipe strung through the top wire in one foot segments is an excellent alternative to flaggery.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture, range and forest land

Applicable Amount

Applies to crop, pasture, range, or forest land types that have existing fencing in need of a retrofit.

Documentation Requirements

1. Identify type(s) of wildlife-friendly fencing techniques used
2. Location on a map showing where wildlife-friendly fencing techniques used
3. Photograph of each wildlife-friendly fencing techniques used

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM29 - Montana Supplement

On-Farm Forage Based Grazing System - (Animal Enhancement Activity)

Montana Clarification

No additional clarification of the national enhancement description.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pasture, range and grazed forestland.

Applicable Amount

Acres of pasture, range or grazed forestland.

Documentation Requirements

1. Provide a written grazing plan following the “Plans and Specifications” guidelines in the 528 Prescribed Grazing standard **and specifications**. Include time and timing of grazing, minimum and maximum grazing heights, season of use, grazing records and monitoring plan of pastures in the grazing plan, as appropriate for the land use.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Stewardship Program
2013 Ranking Period 1

ANM32 Montana Supplement

Extend existing filter strips or riparian herbaceous cover for water quality protection and wildlife habitat

Montana Clarification

This enhancement is available to widen an existing filter strip or riparian herbaceous buffer that already meets NRCS standards. If the existing width is variable, the planner will use the average width. Where field boundaries prohibit extending the buffer to 60 feet, the planner may GPS the existing filter strip or riparian herbaceous cover boundary and the proposed location of the boundary, import this information into Toolkit and determine the area.

For additional information on planning filter strips or riparian herbaceous cover contact your local NRCS field office and request a copy of MT-393 Filter Strip or MT-390 Riparian Herbaceous Cover.

Montana Specifications

If the existing filter strip or riparian herbaceous cover is 35 feet, the existing buffer (that meets NRCS standards) would need to be extended an additional 25 feet to meet the 60 feet minimum width to qualify for this enhancement.

The following species and species groups are suitable for extending existing filter strips and riparian herbaceous cover for water quality protection and wildlife habitat:

1. Wheatgrasses: tall, intermediate, pubescent, slender, thickspike, western and bluebunch.
2. Wildryes: basin, beardless.
3. Native forbs such as Maximillian sunflower, purple and white prairie clover.
4. American vetch.
5. Small burnet.
6. All grass and forb species listed in Table 1, Specification MT 393, Filter Strip (see below).

| Table 1. Grass and Legume Species Characteristics and Adaptability | | Soil Protection and Cover 1/ | | | |
|--|--|------------------------------|----------------|------------------|---------------------------|
| Species | Moisure Range of Adaptability (inches) | Riparian Areas | Critical Areas | NitrogenUptake2/ | Full Seeding Rate (PLS)4/ |
| Bromegrass, Mountain | 14-20 | N | Y | M | 10.0 |
| Needlegrass, Green | 12-18 | N | Y | L | 5.0 |
| Orchardgrass | 15+ | N | Y | M | 3.0 |
| Wheatgrass, Intermediate | 13-22 | N | Y | H | 10.0 |
| Wheatgrass, Pubescent | 12-20 | N | Y | H | 10.0 |
| Wheatgrass, Slender 3/ | 12-20 | N | Y | M | 6.0 |
| Wheatgrass, Thickspike | 10-18 | Y | Y | L | 6.0 |
| Wheatgrass, Streambank | 8-18 | Y | Y | L | 5.0 |
| Alfalfa | 12+ | N | Y | M | 5.0 |
| Clover, Alsike | 16+ | N | Y | M | 3.0 |
| Clover, Ladino | 16+ | N | Y | M | 4.0 |
| Clover, White | 14+ | N | Y | M | 4.0 |
| Sweetclover | 10+ | N | Y | L | 4.0 |
| Trefoil, Birdsfoot | 14+ | N | Y | L | 3.0 |
| Milkvetch, Cicer | 14+ | N | Y | M | 7.0 |
| Fescue, Hard | 14-20 | N | Y | M | 3.0 |
| Gramma, Blue | 10-18 | N | Y | L | 2.0 |
| Ricegrass, Indian | 10-18 | N | Y | L | 6.0 |
| Needle and Thread | 10-18 | N | Y | L | 6.0 |
| Saltgrass, Inland | 15+ | Y | Y | L | 2.0 |
| 1/ Y = well adapted; N = not adapted. | | | | | |
| 2/ uptake potential is based on relative N, use efficiency assuming adequate moisture is available for plant growth. (L) low uptake, (M) moderate uptake, (H) high uptake. | | | | | |
| 3/ Slender Wheatgrass cannot be more than 10% of the seed mix | | | | | |
| 4/ PLS = Pure Live Seed; % purity X % germination | | | | | |

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture and rangeland

Applicable Amount

Only applies to acres of existing buffers on crop, pasture, or range land types

Documentation Requirements

1. A map showing the location and size of enhanced riparian forest buffers.
2. Documentation of the type and rates of vegetation planted in the new riparian forest buffers.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM33 Montana Supplement

Riparian Buffer, Terrestrial and Aquatic Wildlife Habitat – (Animal Enhancement Activity)

Montana Clarification

This enhancement applies only to **existing** forested and non-forested riparian zones. Utilize select conservation measures in the riparian zone to provide cover, vegetative diversity and structure for wildlife. The width of the riparian zones will be a minimum of 35 feet and a maximum of 150 feet. If the existing width is variable, the planner will use the average width. Average width will not exceed 150 feet. Where field boundaries or landscape prohibit extending the buffer to 150 feet, the planner may GPS the existing riparian forest buffer boundary.

For additional information on planning riparian forest buffers contact your local NRCS field office and request a copy of MT-391 Riparian Forest Buffer.

Montana Specifications

The minimum width for an **existing** forested and non-forested riparian forest buffer for ANM33 is 35 feet. The maximum width for this enhancement will be 150 feet. Enhancement enrolls only existing acres of riparian forest buffer and no new acres will be created. Enhance existing buffers by utilizing conservation measures such as establishing diverse native vegetation; controlling invasive species; retain or create snags; provide off-site watering facility for livestock; create riparian pastures with fencing; relocate trails or access roads.

List of suitable trees and shrubs:

| COMMON NAME | SCIENTIFIC NAME |
|------------------------|------------------------------|
| TREE (CONIFER) | |
| Engelmann Spruce | <i>Picea engelmannii</i> |
| White Spruce | <i>Picea glauca</i> |
| Subalpine Fir | <i>Abies lasiocarpa</i> |
| Western Redcedar | <i>Thuja plicata</i> |
| Ponderosa Pine | <i>Pinus ponderosa</i> |
| Douglas Fir | <i>Pseudotsuga menziesii</i> |
| Western Larch | <i>Larix occidentalis</i> |
| Grand Fir | <i>Abies grandis</i> |
| Rocky Mountain Juniper | <i>Juniperus scopulorum</i> |

| COMMON NAME | SCIENTIFIC NAME |
|-------------------------|-------------------------------|
| TREE (DECIDUOUS) | |
| Plains Cottonwood | <i>Populus sargentii</i> |
| Black Cottonwood | <i>Populus trichocarpa</i> |
| Narrowleaf Cottonwood | <i>Populus angustifolia</i> |
| Green Ash | <i>Fraxinus pennsylvanica</i> |
| Black Hawthorne | <i>Crataegus douglasii</i> |
| Mountain Maple | <i>Acer glabrum</i> |
| Quaking Aspen | <i>Populus tremuloides</i> |
| Water Birch | <i>Betula occidentalis</i> |
| Thinleaved Alder | <i>Alnus incana</i> |

| | |
|----------|---------------------|
| Boxelder | <i>Acer negundo</i> |
|----------|---------------------|

| COMMON NAME | SCIENTIFIC NAME |
|---------------------|------------------------------|
| SHRUB | |
| American Plum | <i>Prunus americana</i> |
| Native Willows | <i>Salix</i> spp. |
| Big Sagebrush | <i>Artemisia tridentata</i> |
| Silver Sagebrush | <i>Artemisia cana</i> |
| Blue Elderberry | <i>Sambucus coerulea</i> |
| Skunkbush Sumac | <i>Rhus trilobata</i> |
| Common Chokecherry | <i>Prunus virginiana</i> |
| Redosier Dogwood | <i>Cornus sericea</i> |
| Silver Buffaloberry | <i>Sherpherdia argentea</i> |
| Common Snowberry | <i>Symphoricarpos albus</i> |
| Wood's Rose | <i>Rosa woodsii</i> |
| SERVICEBERRY | <i>Amelanchier alnifolia</i> |
| Golden Currant | <i>Ribes aureum</i> |
| Silverberry | <i>Elaeagnus commutata</i> |

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture, range and forestland

Applicable Amount

Only applies to acres of existing non-forested and/or forested riparian zones on crop, pasture, range, or forest land types

Documentation Requirements

1. Delineations on a map or aerial photo indicating the stream channel length where the riparian zone has improved habitat.
2. Provide written documentation, on the delineation map, of all riparian zone activities implemented to meet the requirements of this enhancement.
3. List of maintenance activities carried out on riparian acres as prescribed under the practice used, and its specific fish and wildlife considerations.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

 Contract participant

 Date



ANM34 – NEW Montana Supplement

Leave Standing Grain Crops Unharvested to Benefit Wildlife – (Animal Enhancement Activity)

Montana Clarification

This enhancement provides cover and a food source for pheasants and other wildlife that, much of the time, is available above the snow level. Many row crops and small grains, including sorghum, corn, wheat, sunflowers, barley and oats are suitable for this enhancement. Crops that provide insignificant residue and seeds, like sugar beets, are not suitable.

Montana Specifications

All unharvested crop plots (1/2-acre of unharvested crop per each 40-acres of cropland) must be adjacent to or within 1/4 mile of winter cover. Winter cover includes shelterbelts, cattail marsh, tall grasses such as basin wildrye and tall wheatgrass, woody draws and riparian areas. Unharvested crops must be available to wildlife throughout the winter until the field is to be prepared for the subsequent crop.

Incompatible Enhancements:

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS field office

Eligible Land

Cropland

Applicable Amount

Applies only to cropland where grain crops such as corn, soybeans, sorghum, or small grains are grown.

Documentation Requirements

1. Map showing location of unharvested crop plots and winter cover.
2. Record of type of crop left unharvested per 40 acres of cropland.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ANM38 - Montana Supplement

Retrofit watering facility for wildlife escape and to enhance access for bats and bird species

(Animal Enhancement Activity)

Montana Clarification

Watering Facility (MT-614) states that a grippable long lasting material is adequate when selecting escape ramps. Painting and coating are not required. Montana will not require more than 2 ramps per tank. In order to meet the requirements of this enhancement the tank diameter needs to be 10 foot or greater to meet the unobstructed water surface of 10 feet for bats. If there are cross braces they must be on one edge of the tank. Any additional cross braces need to be under the rim of the tank.

Montana Specifications

- A 10 foot diameter tank would require one ramp.
- Tanks greater than 10 foot diameter would require two ramps.
- Montana will not require more than 2 ramps per tank.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture and rangeland

Applicable Amount

Number of existing water facilities. (Do not count enclosed winter waterers.)

Documentation Requirements

Producer will provide a date stamped photograph that clearly shows properly installed escape/access device for each water facility.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



CCR99 – Montana Supplement

Resource Conserving Crop Rotation – (Supplemental payment activity)

Montana specifications

A Resource Conserving Crop Rotation (RCCR) for Montana can be either:

1. A perennial grass, legume or grass legume mix grown for a **minimum of two consecutive** years with at least one year of another crop in the rotation. The RCCR enhancement is not eligible on land that currently is used for long term hay or pasture. The grass or legume must be grown for a minimum of **two years but no more than 6 years**; total rotation can be no more than 7 years. This would involve converting existing cropland where annually planted crops are grown and planting a grass, legume or grass legume mix that is grown for a minimum of two years.

OR

2. Growing an annual legume as a green manure or a “cocktail mix” cover crop for soil health in a small grain rotation. Interseeding of green manure or “cocktail mix” with the cash crop or seeding after harvest is allowed only under irrigated conditions. **No grazing or removal of small grain residue or cover crops is allowed.**

Modification of an existing RCCR to a higher conservation level:

Existing crop rotation must meet RCCR criteria # 1, 2, 3 or 4 to qualify for modification to a higher level.

Criteria # 1 -Add years of grass and/or legumes, Limited to those rotations with a current perennial grass and/or legumes of a least one year beyond the seeding year, but not more than 4 current years of perennial grass and/or legume. **Documentation for this must include current crop rotation showing legume or grass is grown for only 4 years before planting another crop.**

Criteria # 2 -Add diversity of crops grown. Adding diversity to an existing resource conserving crop rotation involves adding different types of crops (i.e.) adding legumes to small grain rotation with a green manure crop or adding a warm season crop (corn, sunflower) to a cool season grass small grain rotation. Adding another small grain (barley) to a small grain (spring or winter wheat) with a green manure crop rotation does not add diversity to the rotation.

Example :

Current RCCR Rotation: One year winter wheat, one year peas as a green manure, one year spring wheat, one year barley (4-year rotation).

New Rotation: One year winter wheat, one year peas as a green manure, one year spring wheat, one year sunflower (4-year rotation).

Criteria # 3 -Add annual crops with cover crops. **No grazing or harvesting of the small grain residue or cover crop is allowed.**

Example:

Current RCCR Rotation: One year barley, one year peas as a green manure planted in spring, one year spring wheat, one year barley (4-year rotation).

New Rotation: One year barley, one year of peas as a green manure planted in spring and terminated prior to maturity, one year Spring Wheat, one year of ‘Cocktail Mix’^{1/} (4-year rotation)

^{1/}**Cocktail mix:** A cover crop cocktail is a variety of broadleaf and grass species including those species listed in Montana Field Office Technical Guide (FOTG) Specification, Cover Crop (Code 340) listed for soil health (see table 1). Cocktail Mixes can be blended for a variety of purposes including soil nitrogen building, weed suppression, soil health, and wildlife enhancement. Mixtures can include warm or cool season grasses or broadleaf species and can be custom mixed depending on season of planting, objectives and species adaptation. The cover crop must be seeded in the spring or directly after harvest under irrigation. Cocktail mixes should be terminated by chemical, mechanical or other methods prior to seed set to prevent mix species from becoming weeds in subsequent crops. Depth of soil moisture should be considered when terminating cocktail mixes to conserve soil moisture for crops. Examples of these mixes can be found at www.pulseusa.com, additional information on cover crops and suppliers (in South Dakota) can be found at: <http://www.sd.nrcs.usda.gov/technical/CoverCrops.html>.

Table 1 -Cover Crop Species for Soil Health

| Cool Season Broadleaves | Warm Season Broadleaves | Cool Season Grasses | Warm Season Grasses |
|--|--|--|--|
| alfalfa beet camelina canola spring clover flax lentils peas, field radishes (deep rooted) sweet clover ⁽¹⁾ turnip vetch ⁽¹⁾ | beans, field buckwheat chickpea cowpeas safflower soybeans sunflower | barley, spring oats, spring triticale, spring triticale, winter wheat, spring wheat, winter | corn millet sorghum sudangrass <u>sorghum/</u> <u>sudangrass crosses</u> teff |

(1) May become a weed in following crops.

If a rotation consists mostly of small grains the cover crop mix must not contain more than 10% of small grains in mixture.

Montana Documentation Requirements

Planned Resource-Conserving Crop Rotation(s):

List crop rotations(s), resource conserving crops, and cover crops that will follow the specific crops as applicable for each rotation to receive supplemental payment:

Rotation # 1: _____ Fields: _____ Years _____

Resource Conserving Crop(s) to be used: _____

Rotation # 2: _____ Fields: _____ Years _____

Resource Conserving Crop(s) to be used: _____

Rotation # 3: _____ Fields: _____ Years _____

Resource Conserving Crop(s) to be used: _____

Records: (for each year of the contract)

- a. Crop rotation records by field including previous crops grown for current rotation
- b. Cover crops planted.
- c. Species, composition and planting rates of cover crops
- d. Method and date of termination of cover crops

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Stewardship Program
2013 Ranking Period 1

ENR01 - Montana Supplement

Fuel Use Reduction for Field Operations – (Energy Enhancement Activity)

Montana Clarification

All field operations must be included in the RUSLE2 analysis comparing baseline and planned fuel consumption.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Acres of cropland.

Documentation Requirements

- The present baseline fuel consumption for all field operations is calculated using RUSLE2 at the time of sign-up. This baseline is compared with fuel consumption for the planned reduced field operations, also calculated with RUSLE2. The estimated reduction in fuel use between the present and the planned must be greater than or equal to 20 percent.
- Documentation of the fields where field operations have changed.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ENR09 - Montana Supplement

Variable Frequency Drive Electric Motors – (Energy Enhancement Activity)

Montana Clarification

Variable Frequency Drives (VFD) shall not be installed if the irrigation system is only a pivot with an end gun which goes in and out of operation.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture, range and forestland

Applicable Amount

Number of pumping plants with single speed electric motors within the selected land use.

Documentation Requirements

1. Documentation of the installation of variable frequency drives such as receipts or pictures.
2. Document with a plan map the type of irrigation systems and acres or the water system on a livestock operation, which justified the VFD system.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ENR10 - Montana Supplement

Using nitrogen provided by legumes, animal manure and compost to supply **90 to 100%** of Nitrogen Needs – (Energy Enhancement Activity)

Montana Clarification

All crop, hay and forage produced on farm must follow and meet MSU fertilizer guidelines ⁽¹⁾.

Phosphorus application rates from manure must follow Montana NRCS and Department of Environmental Quality (DEQ) guidelines for application rates based on soil test results:

Olsen P soil Test (ppm)

Less than 25 ppm

25 – 100 ppm

100 – 150 ppm

Greater than 150 ppm

Application Basis

Nitrogen need

Phosphorus need

Phosphorus need up to crop removal

No application

Manure applications cannot be made on frozen or snow- covered ground. Manure applications must follow all Montana DEQ setbacks including; 100 foot setback or 35 foot vegetated buffer from down-gradient surface waters, sinkholes, wells or other conduits to surface waters.

No synthetic sources of nitrogen (only organic) can be used on the entire farm for this enhancement to be implemented.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop and pasture land

Applicable Amount

Acres of cropland and pasture land

Documentation Requirements

Crop Production records that include:

1. Source of organic nitrogen, e.g. cover crop, manure
2. An estimate of available nitrogen and method used to estimate.
 - a. Lab analysis – **current soil test no more than 12 months old**
 - b. Bio mass calculation
3. Soil test results for each treatment area, **current soil test no more than 12 months old**
4. Amount of manure and/or compost applied per acre
5. Manure nutrient analysis (if applicable)

6. Listing of fields and acres
7. Estimate of legume biomass produced each year

Montana References

- (1) **“Fertilizer Guidelines for Montana Crops” Montana State University Extension Service Publication # EB 161⁽¹⁾** March 2005, Jeff Jacobsen, Grant Jackson and Clain Jones. Website: <http://www.msuextension.org/store/Departments/Agriculture-Topic-Categories/Fertilizers.aspx?sortorder=1&page=8>

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



ENR12 - Montana Supplement

Use of Legume Cover Crops as a Nitrogen Source – (Energy Enhancement Activity)

Montana Clarification

No grazing or haying of the cover crop is allowed. A baseline soil test is required prior to seeding the legume cover crop. A current soil test within 12 months is required.

Montana Specifications

All fertilizer guidelines and special conditions in “Fertilizer Guidelines for Montana Crops”

Montana State University Extension Service Publication # EB 161⁽¹⁾ should be followed.

MSU allows a nitrogen credit from an alfalfa or sweet clover crop of 35-50 lbs/ac (EB161 page 4).

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Acres

Acres of cropland

Documentation Requirements

- 1) A map showing where the enhancement is applied.
- 2) The type of legume cover crop planted.
- 3) Calculations for estimating available nitrogen.
- 4) Application rates of additional nitrogen.
- 5) Realistic yields for field or specialty crop grown.
- 6) **Soil test results (current soil test within 12 months).**

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



FPP02 - Montana Supplement

On-Farm Pilot Project (On Farm Pilot Projects)

Montana Clarification

The On-Farm Pilot Project will be done in cooperation with the NRCS Bridger Plant Materials Center. Participants willing to do one of the items listed below would provide one to four acres of land fenced off to restrict livestock access, machinery needed to plant the project, and be willing to host a field day for four years after the establishment year. Project proposals will be reviewed at the Area Office, and if found acceptable, forwarded to the State Resource Conservationist for final approval.

On-Farm Pilot Project. One of the following must be selected:

1. Big sage brush planting for sage grouse habitat. The following treatments would be applied:
 - a. Plant locally collected seed.
 - b. Plant commercially available seed
 - c. Plant containerized plants grown from locally collected seed.
2. Plant alternate row forage crops (grass/legume) using the following treatments:
 - a. Plant grass only
 - b. Plant legume only
 - c. Plant grass/legume in the same row
 - d. Plant grass and legumes in alternate rows
3. Do a pollinator/crop pest bio-control parasitoid nectar planting using the following treatments
 - a. Plant a native seed mix
 - b. Plant a non native seed mix
4. Plant a cover crop planting :
 - a. Cover crop cocktail mix or other species for soil health.

Montana Specifications

All proposals must be reviewed at the Area offices, and if found acceptable, submitted to the State Resource Conservationist for final approval prior to any funds being obligated.

Documentation Requirements

1. Results or conclusions from the research and demonstration
2. Documentation of the CSP participant's participation in the pilot project including:
 - a. A schedule of activities undertaken by the participant
 - b. Fields or other areas of the farm involved in the pilot

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



FRD01 - Montana Supplement

On-Farm Research and Demonstration (On Farm Research and Demonstration)

Montana Clarification

The On-Farm Research and Demonstration will be done in cooperation with the NRCS Bridger Plant Materials Center or Montana Agricultural Experiment Station. Participants willing to do one of the items listed below would provide one to four acres of land fenced off to restrict livestock access, machinery needed to plant the project, and be willing to host a field day for four years after the establishment year. Project proposals will be reviewed at the Area Office, and if found acceptable, forwarded to the State Resource Conservationist for final approval.

On-Farm Pilot research and demonstration plots must be randomized within replicated blocks. One of the following must be selected:

1. Big sage brush planting for sage grouse habitat. The following treatments would be applied:
 - a. Plant locally collected seed.
 - b. Plant commercially available seed
 - c. Plant containerized plants grown from locally collected seed.
2. Plant alternate row forage crops (grass/legume) using the following treatments:
 - a. Plant grass only
 - b. Plant legume only
 - c. Plant grass/legume in the same row
 - d. Plant grass and legumes in alternate rows
3. Do a pollinator/crop pest bio-control parasitoid nectar planting using the following treatments
 - a. Plant a native seed mix
 - b. Plant a non native seed mix
4. Plant a cover crop planting:
 - a. Cover crop cocktail mix or other species for soil health.

Montana Specifications

All proposals must be reviewed at the Area offices, and if found acceptable, submitted to the State Resource Conservationist for final approval prior to any funds being obligated.

Documentation Requirements

1. Results or conclusions from the research and demonstration
2. Documentation of the CSP participant's participation in the research project including:
 - a. A schedule of activities undertaken by the participant
 - b. Fields or other areas of the farm involved in the research

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



PLT15 Montana Supplement

Establish pollinator and/or beneficial insect habitat – (Plant Enhancement Activity)

Montana Clarification

No haying or grazing is allowed until after frost.

Montana Specifications

Follow the species requirements for early, mid and late flowering period from the following list. The mix must have at least one species from each bloom period for a minimum of three species in the mix. Use this list for both pollinators and beneficial insects:

| <u>Common Name</u> | <u>Latin Name</u> | <u>Bloom Period^{1/}</u> | <u>Availability^{2/}</u> | <u>Relative Cost^{3/}</u> | <u>Full Seeding Rate 4/PLS</u> |
|--------------------------|-------------------------------|----------------------------------|----------------------------------|-----------------------------------|------------------------------------|
| Native Forbs | | | | | |
| Black-samson | <i>Echinacea angustifolia</i> | M | E | L | 9.5 |
| Common yarrow | <i>Achillea millefolium</i> | E-M-L | E | L | 0.5 |
| Blanket flower | <i>Gaillardia aristata</i> | M-L | E | L | 7.0 |
| Lewis flax | <i>Linum lewisii</i> | E-M | E | L | 3.0 |
| Maximilian sunflower | <i>Helianthus maximiliani</i> | M-L | E | L | 1.0 |
| Prairie coneflower | <i>Ratibida columnifera</i> | M-L | E | L | 1.2 |
| Purple prairie clover | <i>Dalea purpurea</i> | M-L | E | M | 3.0 |
| Firecracker penstemon | <i>Penstemon eatonii</i> | E | E-G | M | 1.5 |
| Fuzzytongue penstemon | <i>Penstemon eriantherus</i> | E | F | M | 1.5 |
| Scarlet globemallow | <i>Sphaeralcea coccinea</i> | L | G | M-H | 2.0 |
| Showy milkweed | <i>Asclepias speciosa</i> | M | G | M | 15.6 |
| Smooth blue aster | <i>Symphyotrichum laeve</i> | M-L | G | H | 1.1 |
| Sulphur-flower buckwheat | <i>Eriogonum umbellatum</i> | M | G | M | 5.2 |
| White prairie clover | <i>Dalea candida</i> | M | G | M | 3.0 |
| Beebalm | <i>Monarda fistulosa</i> | M-L | F-G | M-H | 0.9 |
| Silky lupine | <i>Lupinus sericeus</i> | E-M | F | M-H | 44.4 |
| Dotted gayfeather | <i>Liatris punctata</i> | L | F | M-H | 6.4 |
| Goldenrod | <i>Solidago species</i> | E-L | F | M-H | 1.4 |
| Sticky geranium | <i>Geranium viscosissimum</i> | E | F | H | 19.8 |
| Silverleaf phacelia | <i>Phacelia hastata</i> | E | L | H | 7.0 |
| Hairy goldenaster | <i>Heterotheca</i> | M-L | F | M | 3.2 |

| <u>Common Name</u> | <u>Latin Name</u> | <u>Bloom Period</u> ^{1/} | <u>Availability</u> ^{2/} | <u>Relative Cost</u> ^{3/} | <u>Full Seeding Rate</u> <u>4/PLS</u> |
|-------------------------|------------------------------|-----------------------------------|-----------------------------------|------------------------------------|--|
| | <i>villosa</i> | | | | |
| Northern sweetvetch | <i>Hedysarum boreale</i> | E-M | F-G | M | 4.0 |
| Introduced Forbs | | | | | |
| Alfalfa | <i>Medicago sativa</i> | E-M | E | L | 5.0 |
| Alsike clover | <i>Trifolium hybridum</i> | E | G | L | 3.0 |
| Strawberry clover | <i>Trifolium fragarium</i> | E | M | L-M | 3.0 |
| White clover | <i>Trifolium repens</i> | M | E | L | 4.0 |
| Sanfoin | <i>Onobrychis viciifolia</i> | E-M-L | E | L | 34.0 |
| Small burnet | <i>Sanguisorba minor</i> | M | E | L | 20.0 |
| Cicer milkvetch | <i>Astragalus cicer</i> | L | E | L | 7.0 |
| Birdsfoot trefoil | <i>Lotus corniculatus</i> | L | E | L | 3.0 |
| Red clover | <i>Trifolium pratense</i> | E | E | L | 4.0 |
| Native Shrubs | | | | | |
| American plum | <i>Prunus americana</i> | E | E | L | N/A |
| Chokecherry | <i>Prunus virginiana</i> | E | E | L | N/A |
| Serviceberry | <i>Amelanchier alnifolia</i> | E | E | L | N/A |
| Golden currant | <i>Ribes aureum</i> | E | E | L | N/: |
| Skunkbush sumac | <i>Rhus trilobata</i> | E | E | L-M | N/A |
| Black hawthorn | <i>Crataegus douglasii</i> | E | G | L | N/A |
| Antelope bitterbrush | <i>Purshia tridentata</i> | E | G | M | N/A |
| Willow | <i>Salix species</i> | E | E | L | N/A |
| Silver buffaloberry | <i>Shepherdia argentea</i> | E-M | E | L | N/A |

1: E-early; M-mid; L-late. 2: F-fair; G-good; P-poor. 3: L-low; M-medium; H-high.
4: PLS = Pure Live Seed; % germination X % purity.

Pollinator and beneficial insect habitat plantings must remain undisturbed throughout the growing season (until after the first killing frost in the fall) so that flowers are available as a nectar source to adults and succulent herbage can be utilized by larvae. Maintenance treatments, such as grazing, burning, or haying may be required outside of the flowering period. Native and introduced species are generally not compatible in the same planting. Alfalfa, if used with native species, must be limited to no more than five percent of the seed mixture. Other introduced species, such as small burnet and sainfoin, must be used with caution. Plantings must be at least one-half acre in size.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture, range and forestland

Applicable Amount

Applies to all crop, pasture, range or forest land use acres

Documentation Requirements

- 1) A map showing the location and dimension of the pollinator or beneficial insect habitat areas

- 2) A list of pollinator or beneficial insect species planted.
- 3) A list of maintenance activities carried out to manage pollinator or beneficial insect habitat areas.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Stewardship Program
2013 Ranking Period 1

PLT02 - Montana Supplement

Monitoring Key Grazing Areas to Improve Grazing Management – (Plant Enhancement Activity)

Montana Clarification

If the producer is currently not monitoring their grazing land, they are eligible for this enhancement. If the producer is currently monitoring their grazing land such as annual photo plots, the producer may be eligible if they choose to add a new and different grazing monitoring technique and use it to provide additional information to assist them with their grazing decisions.

Montana Specifications:

1. Monitoring will include a photo for each pasture of key grazing area and use of one or more of the following techniques:

a. Plant productivity determinations

b. Measurements of key forage plant heights (before and after grazing) at least once per period

c. Locally applicable methods such as those described in “Monitoring for Grasslands, Shrublands and Savanna Ecosystems” available at

http://usda-ars.nmsu.edu/monit_assess/monitoring.php

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pasture, range, or grazed forestland

Applicable Amount

Acres of pasture, rangeland, or grazed forestland

Documentation Requirements

1. A written grazing plan which meets **the NRCS 528 Prescribed Grazing Standard and Specifications**
2. A map showing the location of each key grazing area
3. Photographs from the photo point locations
4. Written documentation of the monitoring data collected
5. Written documentation of how monitoring data was used to adjust grazing management plans including modifications and objectives

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



PLT06 - Montana Supplement

Renovation of a Windbreak, Shelterbelt or Hedgerow for Wildlife Habitat – (Plant Enhancement Activity)

Montana Clarification

The existing woody sites such as windbreaks, shelterbelts or hedgerows, must be included within the farming operation identified on the FSA 156EZ. This enhancement is not meant to add to the size of a windbreak.

Montana Specifications

The following wildlife species would benefit from windbreak or shelterbelt renovations:

Robin, chirping sparrow, Bullock’s oriole, screech owl, black-capped chickadee, yellow warbler, warbling vireo, eastern kingbird, mourning dove, sharp-tail grouse, Hungarian partridge, wild turkey, white-tail deer

Tree and shrub species needed for windbreak renovations:

| Common Name | Scientific Name |
|----------------------------|----------------------------------|
| Almond, Russian | <i>Prunus tenella</i> |
| Arborvitae, Siberian | <i>Thuja occidentalis</i> |
| Ash, Green | <i>Fraxinus pennsylvanica</i> |
| Buffaloberry, Silver | <i>Shepherdia argentea</i> |
| Caragana | <i>Caragana arborescens</i> |
| Cherry, Nanking | <i>Prunus tomentosa</i> |
| Cherry, Black | <i>Prunus serotina</i> |
| Chokecherry, Common | <i>Prunus virginiana</i> |
| Cotoneaster, Centennial | <i>Cotoneaster integerrima</i> |
| Cotoneaster, Peking | <i>Cotoneaster acutifolia</i> |
| Cottonwood, Plains | <i>Populus sargentii</i> |
| Crabapple, Manchurian | <i>Malus baccata mandshurica</i> |
| Crabapple, Siberian | <i>Malus baccata</i> |
| Currant, Golden | <i>Ribes odoratum</i> |
| Dogwood, Redosier | <i>Cornus stolonifera</i> |
| Elm, Siberian | <i>Ulmus pumila</i> |
| Fir, Douglas | <i>Pseudotsuga menziesii</i> |
| Hackberry, Common | <i>Celtis occidentalis</i> |
| Hawthorn, Arnold | <i>Crataegus arnoldiana</i> |

| Common Name | Scientific Name |
|-------------------------|------------------------------|
| Honeylocust | <i>Gleditsia triacanthos</i> |
| Honeysuckle, Blueleaf | <i>Lonicera korolkowii</i> |
| Juniper, Rocky Mountain | <i>Juniperous scopulorum</i> |
| Lilac, Common | <i>Syringa vulgaris</i> |
| Lilac, Late | <i>Syringa villosa</i> |
| Maple, Amur | <i>Acer ginnala</i> |
| Oak, Bur | <i>Quercus macrocarpa</i> |
| Pine, Limber | <i>Pinus flexilis</i> |
| Pine, Ponderosa | <i>Pinus ponderosa</i> |
| Pine, Scotch | <i>Pinus sylvestris</i> |
| Plum, American | <i>Prunus Americana</i> |
| Popular, White | <i>Populus alba</i> |
| Potentilla | <i>Potentilla fruticosa</i> |
| Redcedar, Eastern | <i>Juniperous virginiana</i> |
| Rose, Woods | <i>Rosa woodsii</i> |
| Sandcherry, Western | <i>Prunus besseyi</i> |
| Sea-buckthorn | <i>Hippophae rhamnoides</i> |
| Serviceberry, Saskatoon | <i>Amelanchier alnifolia</i> |
| Silverberry | <i>Eleagnus commutata</i> |
| Spruce, Black Hills | <i>Picea densata</i> |
| Spruce, Colorado Blue | <i>Picea pungens</i> |
| Sumac, Skunkbush | <i>Rhus trilobata</i> |
| Willow, Golden | <i>Salix alba</i> |
| Willow, Purple | <i>Salix purpurea</i> |

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS field office

Eligible Land

Crop and pasture land

Applicable Amount

Acres of existing windbreaks or shelterbelts

Documentation Requirements

1. Brief written description of the tasks completed with dates and any receipts for planting stock, herbicides, etc.
2. Delineation on a map or aerial photo of renovated windbreak.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



PLT16 - Montana Supplement

Intensive Management of Rotational Grazing – (Plant Enhancement Activity)

Montana Clarification

Enhancement Description: in addition to the information described in this section of the National Enhancement this enhancement would minimize grazing of re-growth, increase the capability to change season of use and increase recovery periods for key forage plants.

Operation and Maintenance

Operation: Clarification of National Enhancement: Planned grazing use should not exceed **50%** of annual production for preferred and desirable forage species during the grazing season (generally April through September in most parts of Montana).

Montana Specifications

This enhancement will require an approved prescribed grazing **plan that follows the NRCS 528 Prescribed Grazing Standard and Specifications.**

Table 1. Optimum grazing periods for tame grass and legume varieties, their re-growth ability, and recommended stubble height (inches) after grazing.

| Grass Variety | Re-growth ability | Optimum Timing of Use | Stubble |
|---------------------------------|-------------------|------------------------|---------|
| Kentucky bluegrass | High | Spring, Fall | 2 |
| Meadow brome | High | Spring, Summer, Fall | 4 |
| Smooth brome | Medium | Spring, Summer, Winter | 4 |
| Tall fescue | Medium | Spring, Fall, Winter | 4 |
| Creeping and meadow foxtail | High | Spring, Summer | 4 |
| Orchardgrass | High | Spring, Summer, Fall | 4 |
| Timothy | Medium | Spring, Summer | 4 |
| Crested and Siberian wheatgrass | Low - Medium | Spring, Fall | 3 |
| Intermediate wheatgrass | Medium | Spring, Summer, Fall | 6 |
| Pubescent wheatgrass | Medium | Spring, Summer, Fall | 6 |
| Tall wheatgrass | Medium | Summer | 6 |

| | | | |
|-----------------------|---------------|-----------------------------|----|
| Altai wildrye | Medium - High | Spring, Summer, Fall Winter | 6 |
| Russian wildrye | Medium - High | Summer, Fall, Winter | 3 |
| Reed Canarygrass | High | Spring, Summer | 4 |
| Alfalfa | High | Summer | 2 |
| Clover, white and red | High | Spring | 2 |
| Cicer milkvetch | High | Summer, Fall | 2 |
| Sainfoin | Medium | Spring, Summer | 8 |
| Sweetclover | High | Summer | 12 |
| Birdsfoot trefoil | High | Summer | 4 |

PASTURELAND

Following routine winter feeding, grazing of pasture forage plants will not be allowed until forage plants grow to at least the four-leaf growth stage. Pastures may be grazed earlier in the spring before the four-leaf growth stage has been achieved only if an adequate rest period is allowed for plant re-growth during the peak-growing season (prior to June 15). Residual grazing heights for pasture species under continuous stocking and rotational grazing are listed in Forage Harvest Management (Code 511) specification, TABLE 1. These heights are suggested to allow for plant growth and recovery following grazing. Refer to *Montana Interagency Plant Materials Handbook* for management information on individual forage species.

The planned grazing system for the pasture units must identify key species and balance forage supply with animal demand. Pasture condition and yield information will be used to determine appropriate stocking rates. Refer to *MT-NRCS Pasture Inventory Worksheet (MT-ECS-116)*. See additional specifications for planned grazing systems under Rangelands in the **Montana NRCS 528 specifications**. Occasionally pasture plants may become over-mature and livestock will reject them. In this instance mowing is desirable to maintain high quality pasture. Mowing pastures should be done only if there is a need to remove undesirable or stagnant vegetation.

Pastures must maintain an appropriate amount and balance of nutrients to be productive. Fertilizer programs will consider the maintenance requirements of the plant species, desired production levels, and soil textures. Soil tests are required prior to the application of fertilizer. Nitrogen fertilizers are used to increase grass production and split applications of nitrogen may be more effective than a single application. Phosphate applications will favor an increase of legumes in the stand. Legumes that are properly inoculated with the appropriate rhizobium will not respond to nitrogen fertilizer and may have soil test results that indicate no nitrogen fertilizer is necessary. Legumes that have not been properly inoculated will respond to nitrogen fertilization. Sulphur and other trace nutrients may be needed.

With rotational stocking methods the need to spread manure should be minimal. There may be areas of manure accumulation where continuous stocking occurs that will need to be dragged to redistribute nutrients back to the pasture.

The maintenance of vigorous stands of forage plants and an adequate fertilizer program will help control weedy plants. If new populations of weeds appear in a pasture, it may be a sign of improper grazing management. Grazing periods can be adjusted to target harvesting of undesirable plants. A combination of control methods should be initiated if weeds become a problem.

Reseeding should be the last step in making a pasture become more productive. In many cases, controlling the management of grazing animals by implementing a grazing plan, followed by correcting deficiencies in soil fertility, will be adequate to bring a pasture back to an acceptable level of productivity. Pasture reseeding should only be considered after these factors have been evaluated.

On irrigated pastures, the type and scheduling of irrigation must be considered when designing the grazing plan. Ideally, pastures should reach field capacity following irrigation before livestock are allowed to graze.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pastureland, Rangeland, or grazed forestland

Applicable Amount

Acres of pasture, rangeland, or grazed forestland

Documentation Requirements

1. **A written grazing plan which meets the NRCS 528 Prescribed Standard and Specifications** and all supporting documentation that is required to meet this Standard and Specifications.
2. A map showing the location of each key grazing area
3. Photographs from the photo point locations
4. Written documentation of the monitoring data collected
5. Written documentation of how monitoring data was used to adjust grazing management plans including modifications and objectives
6. Utilization records and documentation taken from the pastures that are enrolled to monitor use levels and stubble height remaining of key forage plants.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



PLT18 Montana Supplement

Increasing On-Farm Food Production with Edible Woody Buffer Landscapes – (Plant Enhancement Activity)

Montana Clarification

- This enhancement is for windbreaks, shelterbelts or riparian forest buffer systems with trees and shrubs that produce edible products for human or wildlife consumption.

Montana Specifications

- Follow 380 – Windbreak/Shelterbelt Establishment or 391 – Riparian Forest Buffer practice standard and specification for practice design.
- Plant tree and shrubs that produce fruit, seeds or nuts for human or wildlife consumption.
- Use native species whenever possible.

Suitable woody plants that produce fruit, seed or nuts:

| Common Name | Scientific Name | Native/Introduced |
|----------------------------|----------------------------------|--------------------------|
| Almond, Russian | <i>Prunus tenella</i> | Introduced |
| Arborvitae, Siberian | <i>Thuja occidentalis</i> | Introduced |
| Ash, Green | <i>Fraxinus pennsylvanica</i> | Native |
| Buffaloberry, Silver | <i>Shepherdia argentea</i> | Native |
| Caragana | <i>Caragana arborescens</i> | Introduced |
| Cherry, Nanking | <i>Prunus tomentosa</i> | Introduced |
| Cherry, Black | <i>Prunus serotina</i> | Native |
| Chokecherry, Common | <i>Prunus virginiana</i> | Native |
| Cotoneaster, Centennial | <i>Cotoneaster integerrima</i> | Introduced |
| Cotoneaster, Peking | <i>Cotoneaster acutifolia</i> | Introduced |
| Cottonwood, Plains | <i>Populus sargentii</i> | Native |
| Crabapple, Manchurian | <i>Malus baccata mandshurica</i> | Introduced |
| Crabapple, Siberian | <i>Malus baccata</i> | Introduced |
| Currant, Golden | <i>Ribes odoratum</i> | Native |
| Dogwood, Redosier | <i>Cornus stolonifera</i> | Native |
| Elm, Siberian | <i>Ulmus pumila</i> | Introduced |
| Fir, Douglas | <i>Pseudotsuga menziesii</i> | Native |
| Hackberry, Common | <i>Celtis occidentalis</i> | Native |
| Hawthorn, Arnold | <i>Crataegus arnoldiana</i> | Native |

| Common Name | Scientific Name | Native/Introduced |
|-------------------------|------------------------------|--------------------------|
| Honeylocust | <i>Gleditsia triacanthos</i> | Native |
| Honeysuckle, Blueleaf | <i>Lonicera korolkowii</i> | Introduced |
| Juniper, Rocky Mountain | <i>Juniperous scopulorum</i> | Native |
| Lilac, Common | <i>Syringa vulgaris</i> | Introduced |
| Lilac, Late | <i>Syringa villosa</i> | Introduced |
| Maple, Amur | <i>Acer ginnala</i> | Native |
| Oak, Bur | <i>Quercus macrocarpa</i> | Native |
| Pine, Limber | <i>Pinus flexilis</i> | Native |
| Pine, Ponderosa | <i>Pinus ponderosa</i> | Native |
| Pine, Scotch | <i>Pinus sylvestris</i> | Introduced |
| Plum, American | <i>Prunus americana</i> | Native |
| Poplar, White | <i>Populus alba</i> | Introduced |
| Potentilla | <i>Potentilla fruticosa</i> | Native |
| Redcedar, Eastern | <i>Juniperous virginiana</i> | Native |
| Rose, Woods | <i>Rosa woodsii</i> | Native |
| Sandcherry, Western | <i>Prunus besseyi</i> | Introduced |
| Sea-buckthorn | <i>Hippophae rhamnoides</i> | Introduced |
| Serviceberry, Saskatoon | <i>Amelanchier alnifolia</i> | Native |
| Silverberry | <i>Eleagnus commutate</i> | Native |
| Spruce, Black Hills | <i>Picea densata</i> | Native |
| Spruce, Colorado Blue | <i>Picea pungens</i> | Native |
| Sumac, Skunkbush | <i>Rhus trilobata</i> | Native |
| Willow, Golden | <i>Salix alba</i> | Introduced |
| Willow, Purple | <i>Salix purpurea</i> | Introduced |

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop and Pastureland

Applicable Amount

Applies to all pasture and crop land uses.

Documentation Requirements

1. List of edible food producing trees, shrubs and brambles.
2. Brief written description of the activities (criteria) completed with dates of application and receipts for planting stock, herbicides, etc.
3. Acreage of the enhancement activity.
4. Delineations on a map or aerial photo of landscape layout and placement.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



SOE04 - Montana Supplement

Continuous No-Till with High Residue – (Soil Erosion Enhancement Activity)

Montana Clarification

Chemical fallow is allowed with this enhancement. The enhancement is for continuous no-till; not continuous cropping. Permanent hay land is **not** eligible for this enhancement.

Montana Specifications

High and Low Residue Crops for Montana (1)

Low Residue Crops

Beans, Dry
Buckwheat
Camelina
Corn (silage)
Lentils
Mint
Mustard
Peas, Field
Potatoes
Safflower
Soybeans
Sugar Beets
Sunflowers
Sorghum (silage)
Vegetables

High Residue Crops

Barley
Corn (grain)
Durum Wheat
Sorghum (grain)
Speltz
Spring Wheat
Triticale
Winter Wheat

- (1) Not a complete list of all high and low residue crops that can be grown in Montana. For approval of other species, contact the NRCS **Field Office, who will then consult with the State Agronomist. Written approval of the substitute species prior to planting is required (email is acceptable) and should be attached to this supplement.**

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Acres of annually cropped land.

Documentation Requirements

Documentation for each field where this enhancement is applied:

1. Planned crop rotation showing cover crops that will be used after low residue crops,
2. Planting method used for each crops in the rotation (no-till, strip till, direct seeding),
3. List of all other potential ground disturbing farming operations,
4. Method of cover crop termination, e.g. chemical, flail mowing, roller crimper, or combination,
5. Dates for farming operations.
6. Map showing fields and acreage, and
7. Photographs of planted crops.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



SQL02 Montana Supplement

Continuous Cover Crops – (Soil Quality Enhancement Activity)

Montana Clarification

This enhancement is for seasonal cover crops that are planted during the non-productive periods around traditional production crops. Some distinctions of SQL02 and SQL05 are:

- SQL02 cannot be used on the same land as SQL05;
- This enhancement can be planted between crops in the fallow year;
- This enhancement can be planted between crops following harvest;
- In Montana, it is not recommended to plant cover crops following harvest of small grains in a dry land situation due to limited precipitation. If adequate moisture is present or in higher precipitation areas or if irrigation is possible, cover crops could be planted after harvest;
- SQL02 could be planted and grown from spring to fall while awaiting winter wheat planting in the fall; terminate cover crop to ensure adequate soil moisture for winter wheat crop.
- SQL02 does not require that the subsequent crop be no-tilled
- SQL02 can be a single species planting
- Grazing or removal of cover crop residues is not allowed.
- **Montana Criteria for section 1. High bio-mass cover crops for erosion control and increased soil organic matter improvement. Plant a cover crop with a growth potential to produce a minimum of 2,000 lbs/ acre not 3,000 lbs. acre**

Montana Specifications

No grazing or removal of crop residues is allowed. Cover crops should be terminated by chemical, mechanical or other methods prior to seed set to prevent species from becoming weeds in subsequent crops. Depth of soil moisture should be considered when terminating cocktail mixes to conserve soil moisture for crops.

Allowable planting mixes for Montana:

| 1. High Bio-Mass Cover Crop | 2. Legume Cover Crop | 3. Non-Leguminous Cover Crop | 4. Weed Suppression Cover Crop | 5. Bio Diversity Cover Crop ^(d) |
|-----------------------------|---|------------------------------|--------------------------------|--|
| “Cocktail Mixes” | Alfalfa | Brassicas | <u>“Cocktail Mixes”</u> | |
| Oats | Beans (Dry) | Buckwheat | | |
| Wheat | Clovers (Alsike, Ladino, Red, or White) | Camelina | | |
| Speltz | Field peas | Canola | | |
| Tricale | Lentils | Radish | | |
| Teff | Soybeans, | Spring wheat | | |

| | | | | |
|--|--------|--------------|--|--|
| | Forage | | | |
| | | Turnip | | |
| | | Winter wheat | | |

(1) Bio Diversity Cover Crops depends upon crops currently being grown in the rotation. If small grains are the primary crops grown then adding warm season grasses such as corn, millet, sudan grass or teff or adding warm season broadleaves such as sunflower, safflower or buckwheat.

FULL SEEDING RATES FOR COVER CROPS

| SPECIES | DRILLED SEEDING RATES (lb./ac. PLS) | |
|------------------------------------|-------------------------------------|------------------------|
| | Dryland | Irrigated |
| barley, spring | 45-60 | 60-75 |
| beet, sugar ^{2/} | Not recommended | 45,000 (# seeds/ac) |
| buckwheat | 40-50 | 40-50 |
| camelina | 3-5 | 5-7 |
| canola spring | 5-8 | 5-8 |
| chickpea (desi) | 80-100 | 80-100 |
| chickpea (kabuli) | 125-150 | 125-150 |
| clover berseem | 8 | 9 |
| Clover spp | 3-6 | 3-6 |
| corn ^{2/} | 10-15,000 (# seeds/ac) | 32-40,000 (# seeds/ac) |
| flax | 25-45 | 25-45 |
| cowpeas | 20-25 | 20-25 |
| lentils (IndianHead -22,000sds/lb) | 40-70 | 40-70 |
| millet, Foxtail | 4-12 | 4-12 |
| millet, Proso | 15-30 | 15-30 |
| oats | 50-60 | 60-70 |
| peas field | 70-150 | 70-150 |
| radishes (deep rooted) | 8 | 10 |
| safflower | 15-20 | 20-30 |
| sorghum | 5-8 | 8- 10 |
| sorghum / Sudangrass crosses | 5-8 | 8- 10 |
| soybeans | 60-70 | 70-75 |
| sudangrass | 25-30 | 25-30 |
| sunflower ^{2/} | 14-21,000 (# seeds/ac) | 20-25,000 (# seeds/ac) |
| sweetclover | 4 | 3-6 |
| teff | 4-5 | 5-6 |
| triticale spring | 50-60 | 60-70 |
| triticale winter | 50-60 | 60-70 |
| turnips | 8 | 10 |
| vetch | 30 | 40 |
| wheat spring | 50-60 | 60-80 |
| wheat winter | 40-60 | 60-80 |

OPERATION AND MAINTENANCE: Perform all seedbed preparation and planting operations in a manner that will minimize erosion until cover establishment. Control weeds in the cover crop by mowing or herbicide application. Annually terminate cover crop as late as possible in summer or fall to maximize plant growth while retaining adequate soil moisture for the subsequent crop. To avoid potential insect or disease infestations associated with green tissue, terminate cover crop at least two-three weeks prior to planting the next crop.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Acres of annually cropped land

Documentation Requirements

1. Crop rotation records, including rotation length in years, crops and cover crops planted.
2. Sequence and description of operations for each crop and cover crop including harvest, tillage, nutrient placement and planting/seeding **with species and seeding rates.**

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



SQL04 - Montana Supplement – REVISED 1/31/12

Use of Cover Crop Mixes – (Soil Quality Enhancement Activity)

Montana Clarification

For Montana this enhancement requires the use of cover crop mixes that contain five (5) or more different species of cover crops. A mixture of cool and warm season broadleaves, warm season grasses and legumes with a minimum of two crop types different than the predominant crop in the current rotation. No species can consist of more than one third (1/3) of the mix and not more than 10 percent cool season grasses can be planted. Having or harvesting is not allowed. Some distinctions of SQL04 over SQL02 and SQL05 are:

- SQL04 planting mixes cannot be used as credit for SQL02 and SQL05 on the same land;
- This enhancement can be planted between crops in the fallow year;
- In Montana, it is not recommended to plant cover crops following harvest of small grains in a dry land situation due to limited precipitation. If irrigation is possible, cover crops could be planted after harvest;
- SQL04 does require that the crops planted after the cover crop be no-tilled;
- Cover crops, such as a “cocktail mix” grown in the fallow year could be planted in early spring for a cool season mix or planted in late spring to early summer when using a warm season mix. Cover crops should be terminated prior to seed set to reduce chance cover crop species from becoming weeds in the following crops. When termination is done should be determined by planting date, species planted, seed set and soil moisture.

Montana Specifications

Grazing is allowed not to exceed 50 percent of the current year’s growth where a minimum of a six (6) inch stubble height is maintained. Cover crop termination methods are frost killed, chemical application or mechanical. Cover crops should be terminated prior to seed set to prevent species from becoming weeds in subsequent crops. Depth of soil moisture should be considered when terminating cocktail mixes to conserve soil moisture for following crops.

TABLE 1. POTENTIAL COVER CROPS FOR MONTANA ^{1/}

| Cool Season Broadleaves | Warm Season Broadleaves | Cool Season Grasses | Warm Season Grasses |
|--|-------------------------|--------------------------|-------------------------------------|
| alfalfa | beans, field | barley, spring | corn |
| beet | buckwheat | oats, spring | millet |
| camelina | chickpea | triticale, spring | sorghum |
| canola, spring | cowpea | triticale, winter | sudangrass |
| clover, spp. | soybeans | wheat, spring | sorghum/sudangrasses crosses |
| flax | safflower ^{2/} | wheat, winter | teff |
| lentils | sunflower | | |
| peas, field | | | |
| radishes, deep-rooted (forage or daikon) | | | |

| | | | |
|--------------------|--|--|--|
| <u>sweetclover</u> | | | |
| turnips | | | |
| vetch | | | |

- ^{1/} Cover crop species can have a wide range of seeding dates ranging from spring to fall depending on specific use and climatic conditions. Generally soil moisture must be apparent within the top two inches of soil to ensure planting success. This is not a complete list; consult your local NRCS office for other species.
- ^{2/} Safflower should be planted as early as small grains but needs a full growing season for optimum seed production.

FULL SEEDING RATES FOR MAXIMUM PRODUCTION OF COVER CROP SPECIES

| SPECIES | DRILLED SEEDING RATES (lb./ac. PLS) | |
|--|-------------------------------------|------------------------|
| | Dryland | Irrigated |
| alfalfa | 5 | 6 |
| barley, spring | 45-60 | 60-75 |
| beet, sugar ^{3/} | Not recommended | 45,000 (# seeds/ac) |
| buckwheat | 40-50 | 40-50 |
| camelina | 3-5 | 5-7 |
| canola spring | 5-8 | 5-8 |
| chickpea (desi) | 80-100 | 80-100 |
| chickpea (kabuli) | 125-150 | 125-150 |
| clover berseem | 8 | 9 |
| Clover spp | 3-6 | 3-6 |
| corn ^{3/} | 10-15,000 (# seeds/ac) | 32-40,000 (# seeds/ac) |
| Flax | 25-30 | 30-35 |
| Cowpeas | 20-30 | 30-40 |
| lentils (IndianHead-22,000sds/lb) | 40-70 | 40-70 |
| millet, Foxtail | 4-12 | 4-12 |
| Millet, Pearl | 10-20 | 10-20 |
| millet, Proso | 15-30 | 15-30 |
| Oats | 50-60 | 60-70 |
| peas field | 70-150 | 70-150 |
| radishes, deep-rooted (forage or daikon) | 8 | 10 |
| Safflower | 15-30 | 15-30 |
| Sorghum | 5-8 | 8-10 |
| sorghum / Sudangrass crosses | 5-8 | 8-10 |
| Soybeans | 25-40 | 35-45 |
| sudangrass | 25-30 | 25-30 |
| sunflower ^{3/} | 14-21,000 (# seeds/ac) | 20-25,000 (# seeds/ac) |
| sweetclover | 4 | 3-6 |
| teff | 4-5 | 5-6 |
| triticale spring | 50-60 | 60-70 |
| triticale winter | 45-55 | 55-65 |
| turnips | 8 | 8 |
| vetch, chickling | 60 | 60 |
| vetch, hairy | 25-30 | 25-30 |
| wheat spring | 50-60 | 60-80 |
| wheat winter | 40-60 | 50-70 |

^{1/} **Cover crop species can have a wide range of seeding dates ranging from spring to fall depending on specific use and climatic conditions. Generally soil moisture must be apparent**

- within the top two inches of soil to ensure planting success. This is not a complete list: consult your local NRCS office to plant other species.
- 2/ Seeding rates are for a single species planted for maximum crop production; adjust rates for mixtures based on desired percent composition of species.
- 3/ Seed size can vary widely; consider planting by number of seeds per square feet or acre to ensure adequate stands. Recommended seed rates for corn, sugar beet and sunflower are based on seeds per square foot.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS field office

Eligible Land

Cropland

Applicable Amount

Acres of cropland

- **Planned and actual mixture and seeding rates (PLS), of selected species/cultivars.**

Documentation Requirements

1. **Written documentation for each year describing, in detail, the following items:**
 - a. **Cover crops species used and date planted. Percent of mix and Pure Live Seed (PLS) seeding rates for each species based on a seed analysis (within one year). "Pure live seed" means the product of the percentage of germination plus hard seed or dormant seed multiplied by the percentage of pure seed, divided by 100, with the result expressed as a whole number.**
 - b. **Date and amount of fertilizer applied, based on a current year (within 12 months) soil analysis.**
 - c. **Method to kill cover crop and date completed, and**
 - d. **Crop planted after cover crop and tillage equipment and method(s) used.**
2. **A map showing fields where the enhancement is applied**
3. **Photographs of fields showing cover crop mix.**
4. **Estimate of cover crop biomass production in lbs/ac.**
5. **Percent of cover crop grazed and stubble height after grazing (if applicable).**

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



SQL05 - Montana Supplement

Use of Deep Rooted Crops to Break Up Soil Compaction – (Soil Quality Enhancement Activity)

Montana Clarification

This enhancement is for the use of deep rooted crops to break up compacted soils and improve soil quality. Some distinctions of SQL05 over SQL02 are:

- SQL05 planting mixes cannot be used as credit for SQL02 on the same land;
- This enhancement can be planted between crops in the fallow year;
- SQL05 could be planted and grown from spring to fall while awaiting winter wheat planting in the fall;
- SQL05 does not require that the crops planted after removal be no-tilled;
- SQL05 does allow single species planting but diversity of species is recommended;
- Grazing or removal of cover crop residues is not allowed.

Montana Specifications

Table1. Drilled Seeding Rates for Approved Deep Rooted Cover Crops in Montana Based on Maximum Crop Production ⁽¹⁾

| Species | Dryland lbs/ac. PLS ⁽²⁾ | Irrigated lb/ac. PLS ⁽²⁾ |
|--|---------------------------------------|--|
| Alfalfa | 5 | 6 |
| Radish, deep rooted – Daikon or Forage | 8 | 10 |
| Safflower | 15-30 | 15-30 |
| Sunflower | 14- 20,000 seeds/ac | 20- 25,000 seeds/ac |
| Turnip | 8 | 8 |

⁽¹⁾ If seed is broadcast rates must be doubled.

⁽²⁾ PLS - % Purity x % germination from current (1 year) seed analysis x recommended seeding rate.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Acres of cropland

Documentation Requirements

1. Written documentation for each year describing the following items:
 - a. Deep rooted crop(s) used and date planted, **including** seeding rates of all species.
 - b. Cash crop planted, method used.
2. A map showing fields and acres where the enhancement is applied.
3. Photographs of **all** fields showing deep rooted crops.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



SQL08 - Montana Supplement

Intercropping To Improve Soil Quality and Increase Biodiversity – (Air Quality Enhancement Activity)

Montana Clarification

Grazing is allowed, not to exceed 50 percent of the current year's growth where a minimum of a 6-inch stubble height is maintained. Haying must leave 50 percent of biomass.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Applies to all crop land acres

Documentation Requirements

1. Written documentation for each year of this enhancement describing by field:
 - a. Intercropping system used
 - b. Crops planted
 - c. Seeding rates of all species
2. A map showing fields and number of acres where enhancement was applied
3. Photographs of a representative number of fields.
4. Documentation of grazing and haying (if any); photo or field measurements after grazing or haying has ceased.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



SQL09 Montana Supplement

Conversion of Cropped Land to Grass-Based Agriculture – (Soil Quality Enhancement Activity)

Montana Clarification

Criteria

1. Establish perennial grassland species on cropland according to the NRCS Forage and Biomass Planting (512) (e.g., Pubescent Wheatgrass, Intermediate Wheatgrass, orchard grass, Russian Wildrye, alfalfa). Or establish perennial grassland species on cropland according to the NRCS Rangeland Planting (550) (e.g., Bluebunch Wheatgrass, Green Needlegrass, Western Wheatgrass, Purple Prairie Clover, winterfat).
2. Minimize soil erosion and disturbance when establishing perennials by using techniques such as no-till planting, use of nurse crops that germinate quickly and/or the use of suitable erosion control practices.
3. Use seeding mixtures of at least 3 perennial grasses and 3 perennial forbs and/or legumes. Mixing native and introduced species for the same field is not recommended. Seed mixes should meet specific farm/ranch goals. For recommendations for adapted species and mixes for Montana contact the local NRCS office for assistance to access NRCS Plant Materials Technical Note 46.
4. Use plant density observations from multiple areas in the field(s) to confirm successful establishment two years from the planting date. Use Montana Technical Note 5 (Revision 1) Evaluating Seeding Success for Pasture and Hay Planting (Code 512) and Range Planting (Code 550).

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Acres of annually planted cropland

Documentation Requirements

Addition to national requirements:

If grazing animals will be utilizing forage in these plantings a prescribed grazing plan will be developed **that meets the requirements of the NRCS 528 Prescribed Grazing Standard and Specifications for the newly planted field as well as surrounding pastures that are part of a grazing management unit.**

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL01 - Montana Supplement

Biological Suppression and Other Non-Chemical Techniques to Manage Brush, Herbaceous Weeds and Invasive Species – (Water Quality Enhancement Activity)

Montana Clarification

This enhancement is for the reduction of woody brush, herbaceous weeds and invasive plants using non-chemical methods such as grazing, mowing or insects.

Montana Specifications

Refer to Montana Invasive Species Technical Notes for physical and biological control methods specific for each species at <http://www.mt.nrcs.usda.gov/technical/ecs/invasive/technotes/>.

For woody brush in Montana:

- At this time there are no insects or pathogens that are available to manage brush in Montana.
- Any biological suppression and other non-chemical techniques will not include any of the sagebrush species.
- Consideration of specific wildlife and brush species will be addressed prior to implementing this enhancement with browsing animals such as goats or sheep.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pasture, rangeland, and forest

Applicable Amount

Applies to all pasture, range or forest land types.

Documentation Requirements

Written documentation for each treatment area and year of this enhancement including:

1. A full description of all biological and/or physical suppression techniques utilized include:
 - a. Method(s) of control used
 - b. Area(s) on farm control methods were applied
 - c. Number of animals or insect colonies distributed and the planned time frame of the treatment.
 - d. Photograph(s) of treatment applied
2. A map showing where the activities were applied including treatment acreage.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Stewardship Program
2013 Ranking Period 1

WQL03 - Montana Supplement

Rotation of Supplement and Feeding Areas – (Water Quality Enhancement Activity)

Montana Clarification

This enhancement includes summer mineral movement and winter feeding movement.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pasture, range or forest

Applicable Amount

Applies to all grazing acres in the operation for the selected land use.

Documentation Requirements

A map showing actual locations of supplement and feeding areas in each pasture and a schedule showing how the supplement and feeding areas were moved each year.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL05 Montana Supplement

Apply Nutrients No More Than 30 days Prior to Planned Planting Date – (Water Quality Enhancement)

Montana Clarification

No additional clarification other than described in the national enhancement.

Montana Specifications

All fertilizer guidelines and special conditions in “Fertilizer Guidelines for Montana Crops” Montana State University Extension Service Publication # EB 161⁽¹⁾ should be followed.

- (1) “Fertilizer Guidelines for Montana Crop” Montana State University Extension Service Publication # EB 161⁽¹⁾ March 2005, Jeff Jacobsen, Grant Jackson and Clain Jones. Website: <http://www.msuextension.org/store/Departments/Agriculture-Topic-Categories/Fertilizers.aspx?sortorder=1&page=8>

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Applies to only annually planted crop land use types.

Documentation Requirements

1. For each year of this enhancement, provide documentation of the following:
 1. **A map** showing the treated acres,
 2. Target (planned) crop
 3. Planned planting date
 4. Actual planting date and crop planted
 5. Soil test results, **a current soil test no more 12 months old.**
 6. **Manure analysis results (where appropriate).**
 7. Crop yields (both yield goals and measured yield), and
 8. Nutrient application rates/amounts and application dates for each treatment area

Note: In lieu of documenting each individual item listed in the Documentation Requirements, a Certified Crop Advisor plan that contains each of the items may be substituted.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL07 - Montana Supplement

Split Nitrogen Applications, 50% after Crop Emergence or Pasture Green Up – (Water Quality Enhancement Activity)

Montana Clarification

The 50% nitrogen applied after crop emergence or pasture green up can be applied in more than one application. It does not have to be all at once. For winter wheat, a starter fertilizer will be used in the fall (no more than 50%) with the remaining fertilizer applied in the spring 30 days after green up. MSU recommends no more than 20 lbs. of starter fertilizer placed next to the seed.

Montana Specifications

Soil tests will be required for each treatment area (field) on an annual basis (Must follow criteria in EB161).

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland or pasture

Applicable Amount

Applies to all crop or pasture land use acres.

Documentation Requirements

1. Written documentation for each treatment area (field) and year of this enhancement describing these items:

- a. **Planting date and Crop Planted**
- b. Acres shown on a map where the activity is applied.
- c. Date of crop emergence.
- d. Annual manure analysis results (if organic nutrient sources are used).
- e. Crop yields (both yield goals and measured yield).
- f. Nutrient application rates/ amounts and application dates for each treatment area.
- g. **Scouting reports**
- h. Soil test results for each treatment area (field) on an annual basis.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL09 - Montana Supplement

Apply Phosphorus Fertilizer Below the Soil Surface – (Water Quality Enhancement Activity)

Montana Clarification

The amount of phosphorus applied shall equal the recommended amount by Montana State University for each crop (EB161 - Fertilizer Guidelines for Montana Crops - page 21).

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Amount

Applies to all annually planted crop land use acres

Documentation Requirements

1. Documentation for each Treatment area (field) and year of this enhancement describing the following:
 - Treatment acres
 - Target (planned) crop
 - Soil test results, **a current soil test no more 12 months old**
 - Crop yields (both yield goals and measured yield)
 - Phosphorus application rates/amounts and application dates for each treatment area
 - Method used to inject or incorporate phosphorus. **IN MONTANA PHOSPHORUS MSU BE INJECTED AND NOT INCORPORATED.**
2. A map showing where the activities are applied

Montana References

- (1) “Fertilizer Guidelines for Montana Crops” Montana State University Extension Service Publication # EB 161⁽¹⁾ March 2005, Jeff Jacobsen, Grant Jackson and Clain Jones. Website: <http://www.msuextension.org/store/Departments/Agriculture-Topic-Categories/Fertilizers.aspx?sortorder=1&page=8>

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL10 - Montana Supplement

Plant a Cover Crop That Will Scavenge Residual Nitrogen – (Water Quality Enhancement Activity)

Montana Clarification

When utilized, this activity will require a current year soil test. A cover crop is grown to bring the nitrogen closer to the soil surface so that it is more readily available for the next crop.

Montana Specifications

Drilled Seeding Rates of Cover Crop Species for scavenging residual nitrogen in Montana (1)

| Crop | Dryland lbs/ac of PLS ⁽²⁾ | Irrigated lbs/ac of PLS ⁽²⁾ |
|----------------|---|---|
| Barley | 45-60 | 60-75 |
| Oats | 50-60 | 60-70 |
| Radish, Forage | 8 | 10 |
| Sorghum | 5-8 | 8-10 |
| Sudangrass | 25-30 | 25-30 |
| Triticale | 50-60 | 50-60 |
| Turnip | 8 | 10 |
| Wheat, Spring | 50-60 | 60-80 |
| Wheat, Winter | 60-80 | 60-80 |

(1) Montana Field Office Technical Guide (FOTG) Specification, Cover Crop (Code 340).

(2) PLS = Percent Germination X Percent Purity ÷ 100. Example: PLS for dryland turnip: If current seed tag analysis shows % germ = 95% and % purity = 90% (.95 x .90 = .855 PLS). Turnip drilled seeding rate for dryland = 8 lbs. (8 lbs / .855) = 9.4 lbs of total seed would give recommended rate of 8 lbs /ac of PLS

Broadcasted seeding rates need to be doubled.

Cover crops should be terminated by chemical, mechanical or other methods prior to seed set to prevent species from becoming weeds in subsequent crops. Depth of soil moisture should be considered when terminating cover crops to conserve soil moisture for crops.

Haying is not allowed. Grazing is allowed not to exceed 50 percent of the current year's growth where a minimum of a 6-inch stubble height is maintained when cover crops are grown in lieu of chemical fallow.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS field office

Eligible Land

Cropland

Applicable Amount

Applies to only annually planted crop land use acres.

Documentation Requirements

Documentation for each treatment area (field) and year of this enhancement describing these items:

1. A map showing where the activities are applied
2. Cover crop species planted,
3. Cover crop planting date,
4. Cover crop seeding rate (bu/ac),
5. Annual crop planted,
6. Nitrogen application rates/amounts for the annual crop:
 - a. **If N application rates increased, technical justification shall be provided for the increase,**
 - b. **If N application rates were decreased in excess of the default residual value recommended by the LGU, technical justification shall be provided for the increase, and**
7. Treatment acres.
8. **Soil test analysis, no more than one year old.**

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL11 - Montana Supplement

Precision Application Technology to Apply Nutrients – (Water Quality Enhancement Activity)

Montana Clarification

All **Six** of the activities listed under criteria in the National Enhancement must be implemented. **Defined management zones (DMZ's) must be set up and soil samples done for all DMZ's)** **All fields must be yield monitored with a GPS system and yield monitoring data and yield goals must be used to calculate nutrient requirements. If yield monitoring data and soils maps are used to set up DMZ's a minimum of three years of yield monitoring data must be used to set up DMZ's initially.**

Montana Specifications

Soil tests must be no more than 12 months old.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland, pasture

Applicable Amount

Applies to crop or pasture land use acres.

Documentation Requirements

Documentation for each field and year where this enhancement is applied:

1. A map showing the fields and acres where this enhancement is applied,
2. Crop grown in each field and maps with yield monitoring results (**yield monitor map**)
3. Soil sampling protocol **with the number of soil samples taken per treatment area**
4. Soil test results, **a current soil test no more 12 months old**
5. **Map(s) showing management zones for each field**
6. Calibration of fertilizer application equipment, and
7. Nutrient application rates/amounts and application dates for each DMZ (**“as applied map”**).

Note: In lieu of documenting each individual item listed in the Documentation Requirements, a Certified Crop Advisor plan that contains each of the items may be substituted.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL13 - Montana Supplement

High Level Integrated Pest Management to Reduce Pesticide Environmental Risk – (Water Quality Enhancement Activity)

Montana Clarification

Win-PST will be run at the beginning of the contract for the most commonly applied chemicals. NRCS or a TSP may run Win-PST. A producer may download Win-PST and run themselves, but NRCS will review results. A certified crop advisor or equivalent professional is not required to implement this enhancement. It is acceptable for the producer or a qualified weed manager to develop the high level IPM plan but it must be reviewed by the NRCS area office.

Montana Specifications

High level Integrated Pest Management (IPM) will include a written IPM plan and implementation of activities that include:

Prevention:

1. Pest-free seeds and transplants
 - a. (Note: weed seed free to certification standards and the seed label is required documentation)
2. Cleaning equipment between fields
 - a. (Note: must include all equipment leaving an infested area)
3. Irrigation management to prevent disease (irrigated land only).
 - a. Fusarium head blight of wheat and barley: “Suspend irrigation prior to flowering until after anthesis. This reduces spore dissemination from in-crop residue” (MSU Montguide).
 - b. Net blotch, spot blotch, and scald diseases of barley: “Management of these diseases can be achieved by crop rotation, variety selection, irrigation management to reduce of humidity in the canopy, light tillage to reduce residue, and fungicide application” (MSU Montguide).
 - c. Sharp eyespot and eyespot/strawbreaker footrot: “**Management:** Crop rotation, variety selection, irrigation management to reduce humidity in the canopy, light tillage to reduce residue, and fungicide application” (MSU Extension web001).
 - d. Fusarium crownrot and common rootrot: “**Management:** Crop rotation, variety selection, proper fertilization, irrigation management to maintain continuous moisture, light tillage to reduce residue where applicable” (MSU Extension web001).
 - e. Fusarium head blight (scab) of wheat and barley: “**Management:** Crop rotation, cut irrigation 10 days before flowering and through the flowering period, resistant varieties, fungicides applied at or before flowering” MSU Extension web003). The MSU Extension specialist is Mary Burrows – There are screen systems to screen weed seeds from irrigation water (visit the Bridger PMC to see one) but are not necessarily required.

Avoidance:

1. Pest-resistant varieties
2. Crop rotation
3. Trap crops.

Monitoring:

1. Field scouting
2. Soil testing.

Non-chemical suppression (one or both of the following) will be used to maintain pest below the economic threshold:

1. Cultural (use of grazing animals to suppress weeds, clipping weeds before they go to seed, pulling weeds, crop rotation, irrigation water management, and nutrient management are some examples of cultural practices)
2. Biological - on Montana croplands, biological control is encouraged but not required.

Chemical suppression will be applied when the pest reaches the economic threshold.

A minimum mitigation index score of >45 is required for the environmental risk identified by Win-PST. Mitigation index scores from IPM techniques and conservation practices are quantified using Tables 1 & 2 NRCS Agronomy Technical Note #5, Pest Management in the Conservation planning Process:

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044467.

Note: Montana State University does not have any formal IPM Guidelines.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop, pasture, range, or forest land

Applicable Acres

Applies to all land uses where pesticide environmental risks are present that need mitigation options to meet or exceed the criteria in the job sheet.

Documentation Requirements

1. A description of the high level IPM system that is utilized on all of the offered acres. This description should include each of the following items:
 - a. Pest prevention techniques (weed free seed labels)
 - b. Pest avoidance techniques
 - c. Pest monitoring (scouting) techniques
 - d. Economic pest thresholds
 - e. Pesticide environmental risk analysis tool that was utilized (e.g., the NRCS Windows Pesticide Screening Tool – WIN-PST)
 - f. Pesticide application records with the specific management techniques that were utilized to reduce pesticide environmental risk (i.e., spot treatment, banding, pheromone traps, pesticide incorporation, etc.)

2. If formal IPM Guidelines with a numeric scoring system have been developed and approved by Extension, a completed set of those guidelines can be substituted for the documentation requirements in number 1 above. (Note: Note: Montana State University does not have any formal IPM Guidelines.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL17 - Montana Supplement

Use of Non-Chemical Means to Kill Cover Crops (Water Quality Enhancement Activity)

Montana Clarification

This enhancement is available only on cropland acres. Grazing is not an option to kill the cover crop.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS field office

Eligible Land

Cropland

Applicable Acres

Applies to all crop land use acres, not including hay land.

Documentation Requirements

1. Written documentation for each year of this enhancement describing the following items:
 1. Cover crop used and date planted,
 2. Date and amount of fertilizer applied (if used),
 3. Date on which cover crop was terminated
 4. Cash crop planted and method used
 5. Method of cover crop termination
2. A map showing fields where the enhancement is applied.
3. .Photographs of a representative number of fields showing non-chemical termination method.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Stewardship Program
2013 Ranking Period 1

WQL19 - Montana Supplement

Transition to Organic Grazing Systems – (Water Quality Enhancement Activity)

Montana Clarification

Environmental benefits will be operation specific. This enhancement supports a transition to an organic grazing system from a conventional system. The applicable acres are all grazed pastureland, rangeland or forest lands that are in the process of transitioning to an organic system.

Montana Specifications

All standards of the United States Department of Agriculture (USDA) National Organic Program (NOP) for production, handling and labeling of organic agricultural products must be followed.

Information regarding USDA-NOP standards, application forms and processes, certification requirements and certifying agents can be found at:

<http://www.ams.usda.gov/AMSV1.0/nop>

or through the Montana Department of Agriculture Organic Program:

<http://agr.mt.gov/organic/Program.asp>

By Mail:

Montana Department of Agriculture
P.O. Box 200201
Helena, Montana 59620-0201

Physical Location:

303 North Roberts Street
(corner of 6th and Roberts)
Helena, Montana

By Phone: (406) 444-3144

By E-mail: agr@mt.gov

By Fax: (406) 444-5409

Hearing Impaired: Dial 711

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Pasture, range and forest land

Applicable Acres

Applies to only pasture, range, or forest land use acres that are IN THE PROCESS of transitioning to an organic production system.

Documentation Requirements

1. Provide a written grazing plan **following the NRCS 528 Standard and Specification** guidelines. Include time and timing of grazing, minimum and maximum grazing heights, and date rotated in and date off of pastures/paddocks in the grazing plan, as appropriate for the land use as well as other documentation needed to meet the 528 standard.
2. Provide a record of the application of inputs according to the NOP rules, e.g., type, date, rate, and amount of allowed nutrients and pesticides for forage and livestock.
3. Provide a copy of the Organic System Plan when approved by the certifying agent.

NRCS Pasture Notes, grazers notebooks, or other record keeping systems for pasture livestock operations can be used to facilitate record-keeping.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Stewardship Program
2013 Ranking Period 1

WQL20 - Montana Supplement

Transitions to ORGANIC Cropping Systems - (Water Quality Enhancement Activity)

Montana Clarification

This enhancement is applicable only on cropland.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland

Applicable Acres

Applies to only crop land use acres in the process of transitioning to an organic production system.

Documentation Requirements

All standards of the United States Department of Agriculture (USDA) National Organic Program (NOP) for production, handling and labeling of organic agricultural products must be followed.

Information regarding USDA-NOP standards, application forms and processes, certification requirements and certifying agents can be found at:

<http://www.ams.usda.gov/AMSV1.0/nop>

OR through the Montana Department of Agriculture Organic Program:

Website:

<http://agr.mt.gov/organic/Program.asp>

By Mail:

Montana Department of Agriculture
P.O. Box 200201
Helena, Montana 59620-0201

Physical Location:

303 North Roberts Street
(corner of 6th and Roberts)
Helena, Montana

By Phone: (406) 444-3144

By E-mail: agr@mt.gov

By Fax: (406) 444-5409

Hearing Impaired: Dial 711

Documentation Requirements (cont.)

1. Written narrative of practices used to:
 - a. Improve soil quality including crop rotation, cover crops and other associated practices,
 - b. Provide plant nutrients, and
 - c. Control pests in the cropping system.
2. Map showing field boundaries and buffer zones.
3. RUSLE2 documents displaying STIR before and after.
4. A record of the application of inputs according to the NOP rules, e.g., type, date, rate, and amount of allowed nutrients and pesticides.
5. Documentation of practices applied and steps taken to receive organic certification based on consultation with an accredited organic certifier.
6. Copy of the Organic System Plan when approved by certifying agent.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Stewardship Program
2013 Ranking Period 1

WQL21 - Montana Supplement

Integrated Pest Management for ORGANIC Farming – (Water Quality Enhancement Activity)

Montana Clarification

Use of chemicals is prohibited with this enhancement. This enhancement is applicable on crop, pasture, or range lands.

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland, pasture, rangeland

Applicable Acres

Applies to crop, pasture, or range land uses IN an organic system where pesticide environmental risks are present that need mitigation options to meet or exceed the criteria in the job sheets

Documentation Requirements

All standards of the United States Department of Agriculture (USDA) National Organic Program (NOP) for production, handling and labeling of organic agricultural products must be followed.

Information regarding USDA-NOP standards, application forms and processes, certification requirements and certifying agents can be found at.

<http://www.ams.usda.gov/AMSV1.0/nop>

or through the Montana Department of Agriculture Organic Program:

Website:

<http://agr.mt.gov/organic/Program.asp>

By Mail:

Montana Department of Agriculture
P.O. Box 200201
Helena, Montana 59620-0201

Physical Location:

MT-WQL21

CSP2013-01

Page 1 of 2

303 North Roberts Street
(corner of 6th and Roberts)
Helena, Montana

By Phone: (406) 444-3144

By E-mail: agr@mt.gov

By Fax: (406) 444-5409

Hearing Impaired: Dial 711

Documentation Requirements (cont.)

1. **A Written organic IPM system plan for all of the offered acres. This plan should include each of the following items:**
 - a. **Pest prevention techniques,**
 - b. **Pest avoidance techniques,**
 - c. **Pest monitoring (scouting) techniques,**
 - d. **Economic pest thresholds,**
 - e. **Pesticide environmental risk analysis tool that was used for pesticides OR substances selected from the NOP Prohibited and Allowed Substance list (e.g., the NRCS Windows Pesticide Screening Tool – WIN-PST),**
 - f. **Approved pesticide OR substance application records with the specific management techniques that were utilized to reduce pesticide environmental risk (i.e., spot treatment, banding, pheromone traps, pesticide incorporation, etc.),**
 - g. **Map showing location of fields, acreage, beneficial insect habitat, etc., and**
 - h. **Environmental assessment of non-chemical suppression methods, e.g. cultivation, burning,**
2. **Copies of scouting reports and other IPM records used to monitor and evaluate the plans effectiveness**
3. **If formal IPM Guidelines with a numeric scoring system have been developed and approved by Extension, a completed set of those guidelines can be substituted for the documentation requirements in number 1 above.**

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL22 - Montana Supplement

On Farm Composting of Farm Organic Waste – (Water Quality Enhancement Activity)

Montana Clarification

Composting requires a carbon/nitrogen ratio between 25:1 to 40:1 on a dry weight basis. A dependable source of carbonaceous material with high carbon to nitrogen ratio (C:N), such as sawdust, small grain residue, or grass or leaf clippings shall be stored and available to mix with nitrogen rich waste.

Montana Specifications

Maintain moisture levels at 40-65% during composting period. The compost shall maintain a temperature greater than 130 degrees Fahrenheit for a minimum of 5 days.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Crop and pasture

Applicable Acres

Applies to farms that produce livestock manure, vegetable waste and/or other organic wastes from ON farm processing facilities.

Requirements:

- **Manure** - 1,000 pound Dairy Cow, minimum 21 pounds of dry sawdust/straw per 1000lb per day required, (Dairy cow manure requires more carbon due to their diet)
- **Manure** - 1,000 pound Beef Cow, minimum 10 pounds of dry sawdust/straw per 1000lb per day required
- **Manure** - 1,000 pound Finishing Steer or Heifer, minimum 10 pounds of dry sawdust/per 1000lb per day required
- **Dead animals** – 250 pounds of dry sawdust/straw per 1,000 pound animal mortality
- A dry land spring wheat crop yields 80 pounds of residue per bushel
- **NOTE:** If using crop residues for composting manure or dead animals, this residue needs to be harvested and stacked in the fall for a year's worth of material. The information above can be used to give you the pounds of crop residue and acres of residue needed to meet the requirements of this enhancement.

Example;

The applicant has (5) 1,000 pound dead animals a year to compost. This would require 1,250 pounds of sawdust/straw. If the applicant has a 30 bushel yield there is 2,400 pounds of residue produced per acre. If a crop fallow cropping system is used, only 50 percent of the acres are available for baling crop residue. Only **50 percent** of the residue

can be removed from the field in order to assure that soil surfaces are protected from erosion. With 1,200 pounds per acre available and 1,250 pounds needed a total of about 1 acre would be needed.

Documentation Requirements

1. Document the temperature, number of turnings, and moisture levels, with dates of each recording.
2. An inventory of waste products produced on the farm or animal mortality on the farm.
3. An estimate of the annual quantities of compost to be produced.
4. A location map showing the location of the composting facility.
5. A nutrient management plan for the land application of the compost.
6. Composting plan

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQL24 - Montana Supplement

Apply enhanced efficiency fertilizer products - (Water Quality Enhancement Activity)

Montana Clarification

For Montana only enhanced efficiency nitrogen fertilizers will qualify for this enhancement. Enhanced efficiency phosphorus fertilizers will not qualify for this enhancement. For fall planted crops such as winter wheat 50% of the actual nitrogen applied must be an enhanced efficiency or controlled release fertilizer. For spring planted cool season crops such as spring wheat a minimum of 25% of the actual nitrogen must be a controlled release fertilizer. For spring planted warm season crops such as corn or sugar beets a minimum of 50% of the actual nitrogen must be a controlled release fertilizer. Split applications of nitrogen fertilizers are allowed as long as the minimum percents of controlled release fertilizer applied are met and a minimum of 25 lbs/acre of actual nitrogen as a controlled release fertilizer is applied. Because this enhancement is for pre-emergent and early post emergent nitrogen fertilizer, application of liquid nitrogen products applied later in the growing season do not apply to this enhancement.

Montana Specifications

All fertilizer guidelines and special conditions in “Fertilizer Guidelines for Montana Crops” Montana State University Extension Service Publication # EB 161⁽¹⁾ should be followed.

Controlled Release and Slow Fertilizers for Montana⁽²⁾⁽³⁾

| <u>Chemical Name</u> | <u>Affected Process</u> |
|------------------------------|-------------------------|
| Polymer-coated (PCU) | Release |
| Sulfur-coated | Release |
| Polymer + Sulfur-coated | Release |
| Urea formaldehyde | Release |
| Methylene Urea | Release |
| Methylene Urea + Triazone | Release |
| Triazone | Release |

- (1) “Fertilizer Guidelines for Montana Crop” Montana State University Extension Service Publication # EB 161⁽¹⁾ March 2005, Jeff Jacobsen, Grant Jackson and Clain Jones. Website: <http://www.msuxextension.org/store/Departments/Agriculture-Topic-Categories/Fertilizers.aspx?sortorder=1&page=8>
- (2) “Enhanced Efficiency Fertilizers” Montana State University Extension Publication EB0188 June 2011, Kathrin Olson-Rutz, Clain Jones and Courtney Pariera Dinkins. Web site: <http://www.msuxextension.org/store/Departments/Agriculture-Topic-Categories/Fertilizers.aspx>

- (3) This may not be a complete list as new products or formulations are being developed. **For approval of other products, contact the NRCS Field Office, who will then consult with the State Agronomist. Written approval of new products will be obtained prior to use (email is acceptable) and should be attached to this supplement.**

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland or pasture

Applicable Amount

Applies to all crop or pasture land use types

Documentation Requirements (for each year of this enhancement)

1. A map showing where the activities are applied.
2. Enhanced efficiency product used, including name and formulation of product,
3. Treatment acres,
4. Soil test results, **current soil test no more than 12 months old**
5. Crops grown and yields (both yield goals and measured yield),
6. Calibration of fertilizer application equipment, and
7. Nutrient application rates / amounts, **methods** and application dates for each treatment area.

Note: In lieu of documenting each individual item listed in the Documentation Requirements, a Certified Crop Advisor plan that contains each of the items may be substituted.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQT01 - Montana Supplement

Irrigation System Automation – (Water Quantity Enhancement Activity)

Montana Clarification

This enhancement is with pivot irrigation systems. The pivot panel must allow for variable rate by changing the time per rotation and applied water.

Montana Specifications

This enhancement requires the installation of a wireless data logger with 6 soil moisture sensors- 3 groups at 2 sensors per system. Set the sensors at 25% and 75% of crop root zone, and different soil types (if applicable). Soil moisture transmitters will send sensor readings to the data logger. Adjust application rates based on moisture readings. Demonstrate that soil moisture is managed between field capacity and management allowed depletion.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Irrigated crop or pasture

Applicable Acres

Applies to only the irrigated acres in the crop or pasture land use.

Documentation Requirements

1. Documentation of the operation of a variable rate irrigation system which will provide for variable application of irrigation water based on variations of soils, topography, or crops.
2. Provide a copy of the irrigation prescription and irrigation logs.
3. Documentation, with the data logger printout of soil moisture, that irrigations were based on moisture sensor readings.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQT03 – Montana Supplement

Irrigation Pumping Plant Evaluation - (Water Quantity Enhancement Activity)

Montana Clarification

No additional clarifications other than those described in the national enhancement.

Montana Specifications

Irrigation Pumping Plant Evaluation shall be conducted in accordance with the Technical Irrigation Pumping Plant Test Procedure Manual (1982, University of Nebraska Institute of Agriculture and Natural Resources).

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland and pasture

Applicable Acres

Applies to all pumping plants in the crop or pasture and use.

Documentation Requirements

(Complete the Table below)

| To be completed by NRCS and Producer during planning | | | To be completed by Producer during certification process | |
|--|----------|---------------|--|---|
| 1 | 2 | 3 | 4 | 5 |
| Tract | Field(s) | Acres Planned | Number of Pumping Plants Evaluated | Date of Irrigation Pumping Plant Evaluation |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Operator completes columns 1-5.

A full and complete report must be completed by the trained service provider. This should address:

1. Age and condition of the components of the irrigation system and pumping plant.
2. Water levels during pumping, a pressure/discharge curve **of the existing pump.**
3. Pump and engine speed (rpm)
4. Actual pumping plant performance versus the Nebraska Performance Criteria
5. Actual pump efficiency versus Manufacturers Published efficiency
6. Recommendations for improvements to the overall system efficiency

7. Estimate of energy savings **if pump runs at Nebraska Performance Criteria** or if improvements are implemented

I certify that the Irrigation Pumping Plant Evaluation on the field(s) listed in the table above meets these specifications and that the following documentation has been provided to NRCS:

1. Documentation must include a completed Irrigation Pumping Plant Analysis Worksheet (**Pgs. MT-WOT03-3 through 6 below**) for each pumping plant evaluated.
2. **If the Trained Service Provide received a CID certification from the Irrigation Association, and it is documented on IA website, they can substitute their own form in place of the worksheet as long as it covers what is asked in the worksheet. <http://www.irrigation.org/hirecertified/>**

I understand that it is my responsibility to obtain all necessary permits and to comply with all laws, regulations and ordinances pertaining to the application of these activities.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date

IRRIGATION PUMPING PLANT EVALUATION

Name _____ County _____ Tract No. _____
 DNRC Well Registration Number _____
 Static Water Level (ft) _____ Pumping Water Level (ft) _____
 Pump Brand _____ Stages _____ Serial No. _____
 Pump Setting _____ Pump Shaft Dia. _____ Threads/in _____
 Pump RPM _____ Motor RPM _____

Pumping Head

| Pumping Head | | | | | |
|-------------------------------|---------------------|---|--|----------------------------------|-----------------------|
| Pressure at Pump Outlet (psi) | Pressure Conversion | Elevation Difference Between Pump Outlet and Pumping Water Surface (ft) | Estimated Friction Loss in Column or Suction Pipe (ft) | Miscellaneous Friction Loss (ft) | (A) Pumping Head (ft) |
| x | 2.31 | + | + | = | |

Flow Test

| Flow Meter Test | | | | | | | | |
|-----------------|---------|---------|--------------------|------------------------|------------------------------|---------------|--------------------|----------------|
| Meter Type | Minutes | Seconds | Time of Test (min) | Gallons at End of Test | Gallons at Beginning of Test | Total Gallons | Time of Test (min) | (B) Flow (gpm) |
| Propeller | | = | | - | = | ÷ | = | |
| Ultra Sonic or | | | | | | | | |
| Magnetic | | | | | | | | |

Collins Flow Gauge:

| 10 Pt. Setting | Setting Position | Right | | Left | |
|----------------|------------------|-------|--|------|--|
| .158D | | | | | |
| .275D | | | | | |
| .354D | | | | | |
| .420D | | | | | |
| .475D | | | | | |

Pipe I.D. _____ Average Velocity _____ x 2.45 x D² = _____ gpm (B)

General Power Unit Inventory

- Internal combustion engine, diesel, gasoline, or propane (complete page 3, Tables 1 and 2)
- Internal combustion engine, natural gas (complete page 3, Tables 3 and 4)
- Electric Motor (complete page 4, Tables 5-7)

Diesel, Gasoline, or Propane Energy Use Test

| Table 1. Diesel, Gasoline, or Propane Energy Use Test | | | | | | | | | | | |
|---|-------------------------------|---|------------------------------|---|-----------------------|---|-------------------------------|---|--------------------------|---|-------------------------|
| Fuel Type | Weight at Start of Test (lbs) | | Weight at Stop of Test (lbs) | | Net Weight Used (lbs) | | Unit Weight of Fuel (lbs/gal) | | Total Time of Test (hrs) | | (C) Energy Use (gal/hr) |
| Diesel | | - | | = | | ÷ | 7.10 | ÷ | | = | |
| Gasoline | | - | | = | | ÷ | 6.00 | ÷ | | = | |
| Propane | | - | | = | | ÷ | 4.25 | ÷ | | = | |

| Table 2. Diesel, Gasoline, or Propane Performance Rating | | | | | | | | | | | | | | | | |
|--|-----------------------|---|----------------|---|-----------------------|---|------------------------|---|-------------------------|---|---------------------------------------|---|--------------------|---|----------------------------|---|
| Fuel Type | (A) Pumping Head (ft) | | (B) Flow (gpm) | | Horsepower Conversion | | Water horsepower (whp) | | (C) Energy Use (gal/hr) | | Actual Plant Performance (whp hr/gal) | | NPPPC (whp hr/gal) | | (D) Performance Rating (%) | |
| Diesel | | × | | ÷ | 3960 | = | | ÷ | | = | | ÷ | 12.5 | × | 100 | = |
| Gasoline | | × | | ÷ | 3960 | = | | ÷ | | = | | ÷ | 8.66 | × | 100 | = |
| Propane | | × | | ÷ | 3960 | = | | ÷ | | = | | ÷ | 6.89 | × | 100 | = |

Natural Gas Energy Use Test

| Table 3. Natural Gas Energy Use Test | | | | | | | | | | |
|--------------------------------------|---|------------------|---|--------------------|---|-------------------|---|-------------------------|--------------------|-----------|
| Dial Capacity | | Dial Revolutions | | Time of Test (sec) | | Correction Factor | | (C) Energy Use (mcf/hr) | Gas Pressure (psi) | Elevation |
| 3.6 | × | | × | | ÷ | | = | | | |

| Table 4. Natural Gas Performance Rating | | | | | | | | | | | | | | | | |
|---|-----------------------|---|----------------|---|-----------------------|---|------------------------|---|-------------------------|---|---------------------------------------|---|--------------------|---|----------------------------|---|
| Fuel Type | (A) Pumping Head (ft) | | (B) Flow (gpm) | | Horsepower Conversion | | Water horsepower (whp) | | (C) Energy Use (mcf/hr) | | Actual Plant Performance (whp hr/mcf) | | NPPPC (whp hr/mcf) | | (D) Performance Rating (%) | |
| Natural Gas | | × | | ÷ | 3960 | = | | ÷ | | = | | ÷ | 66.7 | × | 100 | = |

Electric Energy Use Test

| Table 5. Electric Energy Use Test | | | | | | |
|-----------------------------------|------------------|---|----|--------------------|---|---------------------|
| Meter Type | Disc Revolutions | | Kh | Time of Test (sec) | | (C) Energy Use (kW) |
| Dial | 3.6 | × | × | ÷ | = | |
| | | | | | | |
| | | | | | | |
| Digital | | | | | | |

| Table 6. Electrical Characteristics | | | | |
|-------------------------------------|-------|-------|-------|---------|
| | Leg 1 | Leg 2 | Leg 3 | Average |
| Volts | | | | |
| Amps | | | | |

| Table 7. Electric Performance Rating | | | | | | | | | | | |
|--------------------------------------|-----------------------|----------------|-----------------------|------------------------|---------------------|---|--------------------|----------------------------|--|--|--|
| Energy Source | (A) Pumping Head (ft) | (B) Flow (gpm) | Horsepower Conversion | Water horsepower (whp) | (C) Energy Use (kW) | Actual Plant Performance (whp hr/(kWh)) | NPPPC (whp hr/kWh) | (D) Performance Rating (%) | | | |
| Electric | × | ÷ | 3960 = | ÷ | = | ÷ | 0.885 × | 100 = | | | |

Potential Savings

If the performance rating calculated for the pumping plant is less than 100 %, potential annual savings can be estimated using Tables 8 and 9. A performance rating at, or above 100% indicates that the pumping plant is operating at, or above the expected performance level as defined by the Nebraska Pumping Plant Performance Criteria (NPPPC). A performance rating below 100% indicates the pumping plant is using more energy than the criteria calls for.

| Table 8. Potential Energy Savings Estimated from Annual Hours | | | | | | | | | | | |
|---|---|--|---|--------------------------|--------------------------------------|---------------------------------------|-----------------------------|-------------------------------|--------------------------------------|---|--|
| (D) Performance Rating (%) | | | | (C) Energy Use (unit/hr) | (E) Excess Energy Consumed (unit/hr) | Annual Hours of Operation (hr/season) | Excess Energy (unit/season) | Unit Cost of Energy (\$/unit) | Potential Annual Savings (\$/season) | | |
| 100 | - | | = | 100 = | | = | × | | = | × | |

Table 9. Potential Energy Savings Estimated from Annual Inches Applied

| (F) Water Application | (E) Excess Energy | Unit Cost of | Excess Energy | (F) Water Application | Cost per Acre- | Annual Inches | Potential Annual |
|-----------------------|-------------------|--------------|---------------|-----------------------|----------------|---------------|------------------|
|-----------------------|-------------------|--------------|---------------|-----------------------|----------------|---------------|------------------|

| (B) Flow (gpm) | | | Capacity (ac-in/hr) | Consumed (unit/hr) | Energy (\$/unit) | Cost (\$/hr) | Capacity (ac-in/hr) | Inch (\$/Ac-in) | Irrigated Acres | Applied (in/season) | Savings (\$/season) |
|---------------------------|-----|---|------------------------|-----------------------|---------------------|-----------------|------------------------|--------------------|--------------------|------------------------|------------------------|
| ÷ | 452 | = | | × | = | ÷ | = | × | × | = | |

Field Pump Test Data

While performing the energy use test it is required to document field pump test data. Document current pump configuration and if adjustments were made below.

| Observation No. | Flow (GPM) | Well Pressure (psi) | Drawdown Pumping Level (ft) | Constant RPM <input type="checkbox"/> Motor RPM <input type="checkbox"/> Pump RPM |
|-----------------|------------|---------------------|-----------------------------|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

Note: Field pump test data must show data for all columns above. Flow points should be documented at a constant RPM.

Pump Adjustments*

_____ Pumping Head x _____ Downthrust = _____ Total Downthrust
 _____ Shaft Stretch x _____ Shaft Length/100 = _____ Total Stretch x _____ Threads/in
 = _____ Turns of Nut

Age and Condition of Pumping Plant and Components _____

| | <u>Current Configuration</u> | <u>After Adjustments*</u> |
|---------------------|------------------------------|---------------------------|
| Pumping Water Level | _____ Feet | _____ Feet |
| Operating Pressure | _____ psi | _____ psi |
| Operating Flow Rate | _____ gpm | _____ gpm |
| Power Requirements | _____ Whp | _____ Whp |
| Pump RPM | _____ RPM | _____ RPM |
| Engine RPM | _____ RPM | _____ RPM |
| Performance Rating | _____ % | _____ % |

Adjustments, remarks and recommendations

Date of Test: _____
 Test completed by: _____
 Contact Number of Tester: _____

* It is recommended that the pump adjustment be made only by trained professionals. Adjustments are not required to meet the requirements of the Conservation Security Program Enhancement Water Quality Enhancement Activity WQT03, Irrigation Pumping Plant Evaluation.

Copies of this Field Data form should be completed for each test performed and submitted to NRCS.
 Form modified from Cooperative Extension Service Agricultural Engineering Department, University of Nebraska – Lincoln



WQT05 - Montana Supplement

Remote Monitoring and Notification of Irrigation Pumping Plant Operation – (Water Quantity Enhancement Activity)

Montana Clarification

This enhancement is only for the remote sensing of the pumping plant and does not require the monitoring of the soil moisture. It is intended for use on irrigated cropland and pasture.

Montana Specifications

On pivot irrigation, the applicant must install an improved pivot panel which contacts applicant by cell phone or computer and notifies the applicant of any change to the watering system, such as the pivot and pump turning on or off. On other pumped irrigation systems, the producer must obtain wireless technology which notifies the applicant by a secure internet site that the pump and irrigation system is or is not operating for whatever reason.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland and pasture

Applicable Acres

Applies to all the irrigation pumping plants in the crop or pasture land use.

Documentation Requirements

The producers shall document how many times they were contacted regarding the systems changing and what steps were taken to rectify the situation.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Stewardship Program
2013 Ranking Period 1

WQT07 - Montana Supplement

Regional Weather Networks for Irrigation Scheduling – (Water Quantity Enhancement Activity)

Montana Clarification

There are 28 Agrimet stations in Montana. Locate the nearest station at http://www.usbr.gov/gp/agrimet/agrimet_station_list.cfm.

Montana Specifications

Regional and local weather network shall include documented and dated water use data from the network. The network shall be capable of collecting data for estimating crop water use and suitable for irrigation scheduling purposes. The producer can purchase and use an atmometer to track all data.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland and pasture

Applicable Acres

Applies to irrigated or pastureland where regional weather data is not currently used to schedule irrigation events

Documentation Requirements

Provide documentation of the weather network crop or atmometer ET values used in the scheduling of irrigation. Document by the checkbook method or other accounting, such as the NRCS irrigation scheduling record book, that soil moisture throughout the growing season was managed between field capacity and management allowed depletion.

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date



WQT08 - Montana Supplement

Conversion to Decrease Irrigation Water Quantity or Conversion to Non-Irrigated Crop Production – (Water Quantity Enhancement Activity)

Montana Clarification

Applies to all land currently being irrigated where the irrigation water will cease or **be reduced by 25%.** **Only fields which receive the full irrigation qualify for the 25% reduction.** **Irrigation reduction shall be supported by past and present flow meter readings. The past flow meter reading sets the “benchmark” water applied. The difference in acre feet applied between the two years will be used to justify the 25% reduction.**

Montana Specifications

No additional specifications other than those described in the national enhancement.

Incompatible Enhancements

Some enhancements are not compatible with other enhancements. If you have a question, contact your local NRCS office.

Eligible Land

Cropland or pasture

Applicable Acres

Only applies to crop or pasture land uses where there is acreage that has been irrigated the previous 2 of the last 5 years.

Documentation Requirements (additional to National requirements)

1. **For irrigation reduction, tracking of irrigation by checkbook method, showing the deficit irrigation. This will include the flow meter records**
2. Map showing area to be converted to non-irrigated (dryland) acres

I acknowledge that I have read and understand all that is required for the implementation of this CSP Enhancement Activity.

Contract participant

Date