



CONSERVATION STEWARDSHIP PROGRAM

CONSERVATION ENHANCEMENT ACTIVITY

E328M

Diversify crop rotation with canola or sunflower to provide benefits to pollinators

Conservation Practice 328: Conservation Cropping System

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Diversify existing crop rotation by adding pollinator friendly canola or sunflower crops into the rotation. The crop rotation shall include a minimum of three different crops. Each year, the pollinator friendly crop will be planted on a minimum of 5% of cropland acres contained within the agricultural operation. Use of insecticides compliant with grower industry best management practice is allowed only during pre-bloom and bloom of canola or sunflower.

Criteria

- Crops will be grown in a planned sequence and shall include a minimum of three different crops.
- The crop rotation must include at least one year of canola or sunflower. Other pollinator friendly crops may be included. For these criteria, a pollinator friendly cover crop is considered a different crop. A pollinator friendly crop is defined as a crop, planted for harvest or as a cover crop, which provides nectar for pollinators and other beneficial insects. Examples of pollinator friendly crops are canola, sunflowers, clovers, and borage. To meet the purpose and definition of a pollinator friendly crop, these “flowering” crops must be allowed to bloom prior to harvest or termination.
<REFER TO STATE SPECIFIC LIST OF POLLINATOR FRIENDLY CROPS>

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- Each year the enhancement is planned, the pollinator friendly crop will be planted on a minimum of 5% of cropland acres contained within the agricultural operation. Plan/contract the actual acres planted to the pollinator friendly crop.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.
- Foliar systemic insecticides may not be applied to the pollinator friendly crop.
- Insecticides and fungicides applied during crop pre-bloom and bloom period of the canola or sunflower crop must be mitigated through integrated pest management and must follow industry best management practices.
 - Apply pesticides only when economic thresholds are met.
 - Apply pesticides at night or within two hours of sunset as this is when bees are least active.
 - Follow best practices for minimizing drift:
 - Use a low-drift nozzle, calibrate spray equipment, and use medium-to-coarse droplet size if possible.
 - Install cones or shrouds on field sprayers to reduce off- field movement.
 - When spraying fields, consider spot spraying or only applying pesticides to infested areas.
 - Select crop pest products with a residual activity of less than 8 hours.
 - Improve foraging areas for bees and other pollinators. Where possible, include flowering plants in non-crop areas. Avoid pesticide drift onto non-crop areas that include floral resources. Leave areas that include these resources intact whenever possible.

References

National Sunflower Association of Canada. Sunflower Production Guide. <http://www.canadasunflower.com/production/sunflower-production-guide/>
U. S. Canola Association. 2019. Best management Practices (BMPS) for Pollinator Protection in Canola Fields. https://www.uscanola.com/wp-content/uploads/2019/07/ HBHC_Canola_030119.pdf



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Documentation and Implementation Requirements

Participant will:

- Prior to implementation, provide NRCS with the current and planned crop rotation for all cropland acres on the operation. **<REFER TO STATE SPECIFIC LIST OF POLLINATOR FRIENDLY CROPS>**
- Prior to implementation, as needed, NRCS can provide technical assistance in selecting pollinator crops for the crop rotation or substitute species that would meet the criteria of the enhancement.
- Prior to implementation, provide maps for review by NRCS of the planned crop rotation, including areas which will include the pollinator friendly crops. Each year the enhancement is planned, at least 5% of the cropland acres on the operation must be planted to a pollinator friendly crop.

Current Management Rotation (complete table for each rotation)

Field	Current Crops (in sequence)	Planting Date	Harvest Date

Planned Management Rotation including Pollinator Friendly Crops (complete table for each rotation)

Field	Planned Crops (in sequence)	Planting Date	Harvest Date	Acres in rotation



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- During implementation, maintain records of any pesticide applications to canola, sunflower or pollinator friendly crops, including timing, material/product, application rate, and crop stage.

Field	Crop	Insecticide Applied	Application Date	Application Rate	Crop Stage

- During implementation, notify NRCS of any planned changes in crop rotation, pesticide applications, or management to verify the planned system meets the enhancement criteria.
- After implementation, if changes were made, complete the tables above to document the applied crop rotation for the contract period and provide to NRCS for review.
- After implementation, provide insecticide application records to NRCS for review to verify implementation meets the enhancement criteria.

NRCS will:

- As needed, provide technical assistance in selecting pollinator crops for the crop rotation or substitute species that would meet the criteria of the enhancement.
- As needed, provide additional assistance to the participant as requested.
- Prior to implementation, verify the crop rotation meets the criteria of the enhancement. *Plan/contract the actual acres planted to canola or sunflower.*
- During implementation, evaluate any planned changes in crop rotation, pesticide applications, or management to verify the new system meets the enhancement criteria.



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After implementation, if there were any changes to planned rotation or management evaluate the applied crop rotation using information provided from the participant to verify the applied rotation meets the enhancement criteria.

After implementation, review pesticide application records to verify implementation meets the enhancement criteria.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



SOUTH DAKOTA (SD) SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

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Additional Criteria for SD:

In addition to the criteria specified in the national job sheet E328M, the following additional criteria apply in SD:

- The sunflower or canola crop can be added to the rotation as a cash crop or cover crop. If a cover crop containing canola and/or sunflowers is selected, the cover crop must be planted early enough to allow time to bloom. See days until bloom in the table below. **Cover crop plantings that fail to bloom will not meet the enhancement requirement.**
- At a minimum, 75 percent (%) of the cover crop seed mix will include canola and/or sunflower.
- Sunflowers and/or canola will be planted on a minimum of 5% of cropland acres contained within the agricultural operation each year. Cropland acres identified as perennial hay will not be counted toward the cropland total when determining the 5% minimum.
- Pollinator friendly crops for SD which may be planted in addition to canola or sunflower include species from the table below. No pesticide applications may be applied to the pollinator friendly crops in the table below unless they are planted with sunflowers and/or canola. Herbicide applications to control pervasive weeds in pollinator friendly crops may be considered, contact the state wildlife biologist or Xerces partner staff for guidance.



Table 2.

Cover Crop	BEES AND BENEFICIAL INSECTS		Estimated Days Until Bloom
	Attracts native and honeybees	Predator Parasitoid	
Alfalfa	High	Moderate	60
Brassica hybrids	High	High	120
Buckwheat	High	High	45
Cabbage, African	High	High	80-180
Camelina, Winter	High	High	85-100
Canola	High	High	50
Clover, Balansa	High	Moderate	70-90
Clover, Crimson	High	Moderate	70-90
Clover, Red	High	Low	70-90
Collards or Kale	High	High	120
Cowpeas or Dry Beans	High	High	60-90
Fava beans	Moderate	Moderate	90
Flax	Moderate	Moderate	90-110
Lentils	Moderate	Moderate	80-110
Mustard	High	High	50-85
Phacelia	High	High	45-60
Radishes	High	High	60
Rapeseed	High	High	120
Safflowers	Moderate	Moderate	50
Soybeans	Moderate	Moderate	60-90
Sunflowers	High	High	80-120
Sunn hemp	High	Moderate	60-90
Turnips	High	High	120
Vetch, Chickling	High	High	60-90
Vetch, Common	High	High	60-90
Vetch, Hairy	High	High	45-60