

Water Quality Enhancement Activity – WQL06 – Apply controlled release nitrogen fertilizer



Enhancement Description

All pre-emergent and early post emergent nitrogen fertilizer; except for a small amount starter nitrogen fertilizer (less than 10 lbs/ac of N + K₂O) applied at planting, must be slow-release or controlled release formulations.

Land Use Applicability

Cropland and pastureland.

Benefits

Nutrient management encompasses managing the amount, source, placement, and timing of the

application of plant nutrients and soil amendments. Nutrient management effectively utilizes available nutrient resources to supply crops with nutrients required to efficiently produce food, forage, fiber, and cover while minimizing environmental degradation.

The use of slow or controlled release nitrogen fertilizer makes nitrogen available to plants over a longer portion of the growing season to match the plant uptake needs. This limits the loss of nitrogen to leaching and denitrification, and can help control soil emissions of the greenhouse gas nitrous oxide.

Criteria

Implementation of this enhancement requires:

1. The use of one or more nitrogen fertilizer products defined as slow-release or controlled-release that are recommended or concurred with by NRCS and the state Land Grant University (LGU) on all treatment acres.
2. Application of nutrients within the LGU recommendations based on soil testing and established yield goals and considering all nutrient sources.
3. Minimize soil surface disturbance during nitrogen placement.
4. A small amount (less than 10 lbs/ac of N + K₂O) of nitrogen fertilizer (not treated as controlled released nitrogen) may be applied as a starter at planting time.

Documentation Requirements

1. A map showing where the activities are applied.
2. Fertilizer product used
3. Treatment acres
4. Soil test results
5. Crops grown and yields (both yield goals and measured yield)



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6. Calibration of fertilizer application equipment
7. Nutrient application rates/amounts and application dates for each treatment area



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IDAHO ADDENDUM 2010
Water Quality Enhancement Activity – WQL06 – Apply
Controlled Release Nitrogen Fertilizer

Additional guidance for controlled release nitrogen fertilizer:

Slow release or controlled release formulations of nitrogen fertilizer can better match nitrogen availability to plant growth needs over the season, and reduces potential for loss. All applications of fertilizer should consider and address the potential for off-site impacts.

The following table identifies acceptable chemical and organic slow release fertilizer products.

Chemistry of Chemical and Organic Slow Release Fertilizer Products^{1,2}

Fertilizer Source	Common Abbreviation	Molecular Form	N %	P ₂ O ₅ %	K ₂ O %	S %	Physical State
Reacted Chemical Fertilizers							
Urea formaldehyde	UF	CO(NH ₂) ₂ • additive	38	0	0	0	Pellets
Isobutylidene-diurea	IBD U	Urea, N, N ₁ (2-Methylpropylidene) bis	31	0	0	0	Pellets
Coated Products							
Sulfur Coated Urea	SCU	CO(NH ₂) ₂ • S	39	0	0	12	Pellets
Poly Coated Urea	PCU	CO(NH ₂) ₂ • polymer	41-44	0	0	0	Pellets)
Poly Coated Urea	PCU	CO(NH ₂) ₂ • polymer	41-44	0	0	0	Pellets)
Natural Organic Products							
	C/N Ratio	Lb-N/ton	N %	P ₂ O ₅ %	K ₂ O %	-	Release Rate
Feather Meal	4	200	10	0	0	-	Medium
Bean Meal	7	120	6	1	2	-	Medium
Cottonseed Meal	7	120	9	2	2	-	Slow
Crab Meal	4	100	5	2	0.5	-	Medium

Poultry Manure Compost	15	80	3	4	3	-	Slow
Alfalfa Meal	15	50	3	0.5	3	-	Medium
Legume Hay	16	40	2	0.5	2	-	Medium
Grass Hay	32	30	1.5	0.5	1.75	-	Medium
Finished "Field" Compost	17	20	1	1	1	-	Slow
Spring Beef Manure	15	7	0.35	0.45	0.7		Medium
Fall Dairy Manure	18	6	0.3	0.75	1.8		Slow
Fall Beef Manure	18	6	0.3	0.75	1.8		Slow
Spring Dairy Manure	15	3	0.15	0.12 5	0.2		Medium

¹ Sartain, J. B., Food for turf: Slow-release nitrogen, University of Florida

² Washington State Department of Agriculture (WSDA) Fertilizer Product Database

**This activity may NOT be used with the following enhancements:
ANM21, ANM22, SOE02, WQL07**

**Potential duplicate practices:
590 – Nutrient management**