Nutrient Management Enhancements

Natural Resources Conservation Service
United States Department of Agriculture

Minnesota, 2006

	Enhancement Bundles
Choose and Maintain/Complete:	One (1) Component or;
	Two (2) Components or;
	Three (3) Components or;
	Four (4) Components or;
	Five (5) Components

The components for the enhancement bundles are as follows:

- ✓ Band or row apply all commercial Phosphorus (P_2O_5) fertilizer to better utilize nutrients and address water quality concerns.
- ✓ Inject or incorporate all manure applications within 24 hours to decrease the potential for manure loss to runoff.
- ✓ Apply all commercial nitrogen fertilizer in spring and/or at planting and incorporate within 24 hours to better utilize nutrients and address water quality concerns.
- ✓ Apply commercial Nitrogen and Phosphorus fertilizer and/or manure at rates less than the University of Minnesota fertilizer recommendations to better utilize nutrients and address water quality concerns.
- ✓ Use a nitrogen inhibitor with commercial Nitrogen fertilizer on labeled crops (primarily corn) to better utilize nutrients and address water quality concerns.

Review and sign the following job sheets that describe components for the enhancement bundles you choose to implement and/or maintain.

Apply all commercial nitrogen fertilizer in spring and/or at planting and incorporate within 24 hours to better utilize nutrients and address water quality concerns.

Definition
This enhancement component includes the application of all commercial nitrogen fertilizer spring-pre-plant or post-plant or both. The fertilizer must be sub-surface applied or broadcast and incorporated within 24 hours.

Purpose:
The purpose of this component is to increase nitrogen efficiency use by crops and decrease amount of nitrate available to move below the root zone prior to crop uptake.

Where Used
This component may be used statewide in Minnesota for crops requiring nitrogen applications according to University of Minnesota Fertilizer Recommendations.

Operation and Maintenance
- Sidedress apply to corn before it is 12 inches high.
- Inject or incorporate sidedress applications of urea and UAN to a minimum depth of 4 inches.

Payment
The payment for this component is part of a payment for the enhancement bundle on all fields receiving a nitrogen application at least once during the CSP contract life. Each nitrogen application must be spring-pre and/or post-plant.

Documentation Required
NRCS-Minnesota Form MN-CPA-046 dtd.1/ 04 –Practices Certification Recordkeeping Form or a similar form.

I certify that, to the best of my knowledge, the above information is correct and that, if requested, I will provide additional documentation to support the above information.

Signature _____ Date _____

Apply commercial Nitrogen and Phosphorus fertilizer and/or manure at rates less than the University of Minnesota fertilizer recommendations to better utilize nutrients and address water quality concerns.

Definition
The total amount of N and P_2O_5 applied to fields is less than recommended by the University of Minnesota in the most recent version of "Fertilizer Recommendations for Agronomic Crops in Minnesota" or analogous crop specific publications.

Purpose
The purpose of this component is to maximize net income and minimize potential for excess nutrients to move towards water bodies.

Where Used
This component may be used on all land where nutrients are applied.

Operation and Maintenance
Nitrogen provided by last year's legume crop is subtracted from crop needs (in some cases, university recommendations already do this). Nitrogen supplied by manure applied the past 2 years and legumes grown the prior 2 years are also subtracted from crop needs to come up with "net application needs". The combined application of commercial fertilizer applications and manure applications cannot exceed "net" needed.

Note(s): Manure applications can be based on crop nitrogen needs instead of P_2O_5 needs except on fields receiving an enhancement for P_2O_5 based manure applications or on fields where manure applications must be based on P_2O_5 because of state law requirements.

Payment
The payment for this component is part of a payment for the enhancement bundle on all fields receiving a nutrient application at least once during the CSP contract life. Each application must meet criteria.

Documentation Required
Minn. NRCS forms MN-CPA-046 dtd.1/ 04 or MN-CPA-023, dtd 1/04 – Field Nutrient Management Plan or analogous forms can be used for documentation.

I certify that, to the best of my knowledge, the above information is correct and that, if requested, I will provide additional documentation to support the above information.

Signature _____ Date _____

Inject or incorporate all manure applications within 24 hours to decrease the potential for manure loss to runoff.

Definition
All manure is sub-surface applied or broadcast and incorporated with 24 hours.

Purpose
The purpose of this component is to reduce the amount of nitrogen volatilized to the atmosphere and to reduce potential for phosphorus and potential disease causing organisms to move with surface runoff towards water bodies.

Where Used
This component may be used statewide when soil and moisture conditions allow injection or immediate incorporation. This component is not allowed on frozen, snow covered or actively thawing ground.

Operation and Maintenance
There are no additional operation and maintenance instructions.

Payment
The payment for this component is part of a payment for the enhancement bundle on all fields receiving a manure application at least once during the CSP contract life. The manure must be injected or incorporated within 24 hours of application.

Documentation Required
NRCS-Minnesota Form MN-CPA-046 dtd. 1/ 04 (Practices Certification/Recordkeeping Form) or a similar form.

I certify that, to the best of my knowledge, the above information is correct and that, if requested, I will provide additional documentation to support the above information.

Signature _____ Date _____

Band or row apply all commercial Phosphorus (P_2O_5) fertilizer to better utilize nutrients and address water quality concerns.

Definition
Band or row apply all commercial P_2O_5 by placing P_2O_5 commercial fertilizer below the soil surface in proximity to the seed or root zone. This may include deep banding, point injection and starter applications. *This does not include any fall fertilizer applications.*

Purpose
The purpose of this component is to reduce the amount of applied P_2O_5 needed by crops and to reduce potential for off-site transport of phosphorus.

Where Used
This component may be used:

- on fields requiring P_2O_5 applications according to University of Minnesota Fertilizer recommendations;
- for crops that have a drill or row P_2O_5 recommendation in University of Minnesota Fertilizer Recommendations; and/or
- on soils testing low in phosphorus.

Operation and Maintenance
For operation and maintenance, you must follow the University of Minnesota recommended procedures when placing fertilizer near the seed.

Payment
The payment for this component is part of a payment for the enhancement bundle on all fields receiving a P_2O_5 application at least once during the CSP contract life. Each application must meet criteria.

Documentation Required
NRCS-Minnesota Form MN-CPA-046 dtd. 1/ 04 (Practices Certification/Recordkeeping Form) or a similar form.

I certify that, to the best of my knowledge, the above information is correct and that, if requested, I will provide additional documentation to support the above information.

Signature _____ Date _____

Use a nitrogen inhibitor with commercial Nitrogen fertilizer on labeled crops (primarily corn) to better utilize nutrients and address water quality concerns.

Definition
An N-inhibitor is applied with commercial nitrogen fertilizer to decrease the rate of conversion of ammonium N to nitrate N.

Purpose
The purpose of this component is to reduce potential for nitrate N to leach below the root zone or denitrify.

Where Used
This component may be used:

- mainly on corn (sometimes wheat if labeled in Minnesota);
- with Anhydrous ammonia and occasionally Urea and can be used with Urea Ammonium Nitrate (UAN) with early sidedressed N applications;
- with early sidedressed nitrogen on coarse-textured soils statewide;
- with pre-plant nitrogen applications on poorly drained soils with high soil moisture levels near the soil surface;
- on irrigated coarse textured soils when the majority of the nitrogen is applied in a single preplant or early sidedress application; and/or
- on fields requiring an N application according to University of Minnesota Fertilizer Recommendations.

Operation and Maintenance
Urea impregnated with an N-Inhibitor should be immediately incorporated. It is important to read the label instructions on products containing N-inhibitors. Some products should not be applied through an irrigation system. Some products should not be applied with dry fertilizers containing nitrate such as ammonium nitrate (AN), potassium nitrate or calcium nitrate.

Payment
The payment for this component is part of a payment for the enhancement bundle on all fields receiving a N-inhibitor at least once during the CSP contract life.

Documentation Required
NRCS-Minnesota Form MN-CPA-046 dtd. 1/ 04 (Practices Certification/Recordkeeping Form-use the pesticide section) or a similar form.

I certify that, to the best of my knowledge, the above information is correct and that, if requested, I will provide additional documentation to support the above information.

Signature _____ Date _____