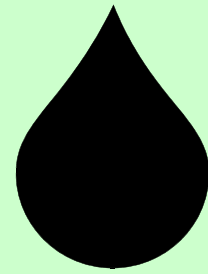


Groundwater

AGRI-BUSINESS STEWARDSHIP

*Brought to you by the Michigan Agri-Business Association
through a grant from the Michigan Groundwater Stewardship Program*



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The objective of this document is to provide you with current and helpful information regarding groundwater protection, and the Michigan Groundwater Stewardship Program.

Slow-Release and Environmentally Stable Fertilizers

Many fertilizer products contain quick- and slow-release nitrogen sources. Slow-release fertilizers have several important advantages, especially when it comes to increasing the productivity of certain crops, improving the margin of safety and long-term effects, and protecting groundwater and other water sources. Slow-release, environmentally stable fertilizers also may have cost benefits.

With slow-release and environmentally stable fertilizers, the nitrogen is often coated with an insoluble or semi-permeable coating that allows water to enter the granule and dissolve the nitrogen slowly. Rising soil temperature increases the nitrogen release rate, matching the plant's growth pattern and nutrient needs.

Bear in mind that not all crops react the same way when it comes to slow-release, environmentally stable fertilizers.

The Benefits

Because of the controlled and slow release of nitrogen, these fertilizers have benefits that can be advantageous to certain crops and help growers strengthen their fertilization programs.

- Generally, the benefits from these fertilizers include increased crop yield and improved nitrogen-use efficiency, with plants and crops absorbing nitrogen as needed and at peak times. Furthermore, plants and crops are better protected from injury because of reduced contact with high concentrations of nitrate.
- Also, producers can realize potential annual cost savings because fewer, longer-lasting and more convenient at-planting applications may reduce annual expenses.
- In addition, fertilizers that slowly release nitrogen can help protect our water supply and overall environment because they reduce nitrogen loss into the soil, water and atmosphere.

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