



Project  
GREEN

# IMPACT

*Addressing plant industry research and educational needs and sustaining Michigan's plant agriculture industry*



## Enhancement and Updating of the MSUFR and MSUNM Computer Programs

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**Project length: 2 years (fiscal years 2001, 2002)**

Sound crop nutrient management decisions rely on knowledge of the soil fertility of crop fields. Records documenting a field's soil nutrient status and the amounts of nutrients added are needed to meet the requirements of nutrient management plans. The MSU Fertilizer Recommendation (MSUFR) program is used by the MSU Soil and Plant Nutrient Laboratory (SPNL) and by county Extension agents for preparing lime and fertilizer recommendations. Recommendations are based on soil test results generated in the SPNL or a commercial soil test lab. MSU Nutrient Management (MSUNM) is a software package to assist crop and livestock producers with fertilizer and manure nutrient management and pesticide application recordkeeping. The new MSUFR program has been incorporated into MSUNM to allow users to generate fertilizer recommendations for individual fields on their computers and manage nutrient inputs.



## 2003 Field

## Crops

## Objectives

Update and enhance the MSU Fertilizer Recommendation (MSUFR) and MSU Nutrient Management (MSUNM) software programs by:

- Developing a new MSUFR program as an interactive Windows program.
- Incorporating into the MSUFR program capability for electronic transfer of soil test data and nutrient recommendations from the MSU Soil and Plant Nutrient Laboratory (SPNL) to county Extension offices, consultants or farm operators, and other stakeholders.
- Improving and enhancing nutrient management and pesticide application recordkeeping capabilities of the MSUNM program.
- Developing technical support options to assist in data transfer between the SPNL and producers submitting samples, especially users of MSUNM.

## Challenges

In 1995, Michigan, Ohio and Indiana adopted uniform nutrient recommendations for corn, soybeans, wheat and alfalfa. Uniformly formatted nutrient recommendations for other field and vegetable crops were needed.

## Conclusions

- Farmers are better able to comply with GAAMPs (generally accepted agricultural management practices), CNMP (comprehensive nutrient management plan) requirements and other regulations by using the MSUNM program.
- The new MSUFR program, coupled with MSUNM, will facilitate better communication of soil test data and nutrient management information among Extension staff members, consultants, farmers and other stakeholders.
- Extension agents will be better able to assist their stakeholders with managing and documenting their nutrient inputs by way of the new MSUFR2 and MSUNM programs.
- A series of nutrient management information sheets has been created.
- Nutrient recommendation and management bulletins have been prepared for field crops and vegetable crops.

## Industry impacts

- Users of the MSUNM recordkeeping program indicate savings of more than \$10,000 annually through more efficient use of on-farm (manure) and purchased (fertilizer) nutrients. Savings are greater for larger sized farming operations.
- Farmers can reduce input costs and/or improve their return on investment in nutrient inputs by \$5 to \$20 per acre.

## The future

Possible partnerships with agricultural consulting firms are being explored to increase the use and distribution of MSUNM. Changes and updates will be made to the MSUFR2 program as necessary, and the complete network will continue to be developed. Producer savings will increase and fertilizer/manure nutrient management by producers will be improved as use of MSUFR and MSUNM increases.

## Funding partners

Project GREEN awarded \$42,500 to this project. The MSU SPNL has supported this project with matching resources and continues to provide support for ongoing upgrades. The direct support leverage factor for this project was 1.0.

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For more information on this project, visit <<http://www.green.msu.edu/July03FINAL/01-011.pdf>>.

