

# **Increasing the Use of Non-Phosphorous Fertilizer in Maine**

A Report to the Maine Legislature's Joint Standing Committee

On Natural Resources



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## **Background**

In April 1998, the 118<sup>th</sup> Maine Legislature enacted 1998 P.L. Ch. 748, "An Act to Reduce Nonpoint Source Pollution from Existing Sources, Amend the Shoreland Zoning Laws and Amend the Site Location of Development Laws." That law, in part, required the Department of Environmental Protection to consult with interested persons and relevant state agencies, and report back to the joint standing committee of the Legislature having jurisdiction over natural resource matters by January 15, 1999, as follows:

"3. The department shall evaluate the availability of non-phosphorous fertilizer for use on lawns and other domestic areas and recommend measures for increasing consumer use of non-phosphorous fertilizers."

The Department developed this report in response to the above mandate with contributions from the following: interested stake holders from manufacturing, wholesale and retail of fertilizer products; scientists, educational outreach specialists and marketing specialists from Department of Environmental Protection, Department of Agriculture, and University of Maine Cooperative Extension Service. In addition scientists from other states were contacted to obtain research and information on the use of non-phosphorous fertilizer in their respective states

## **Introduction**

Research conducted by the Maine Department of Environmental Protection staff has shown that phosphorus levels in Maine lakes are higher in the more developed watersheds. As watersheds are converted from their natural, forested condition to residential, commercial and agricultural uses, the amount of phosphorus runoff into a lake increases by a magnitude of 5 to 10 times (Dennis, 1986). Increased phosphorus in lakes often results in algal blooms turning lakes green, leaving unsightly scum, foul odors and bad tasting water. In some lakes, repeated algal blooms can result in fish kills or loss of the cold water fishery. All these factors reduce property values in lake communities and diminish Maine's appeal to visitors (Michael, et. al., 1996; Schuetz, 1998). There is no feasible way to remove phosphorus once it is in a lake.

The only solution is to control the input of phosphorus into lakes. There is a growing body of research that shows that phosphorus from fertilizer does run off lawns into storm water and ground water both of which can reach lakes (Bannerman, et. al., 1993; Barten & Jahnke, 1997; Ellis & Childs, 1973; Steuer, et. al., 1997). On-going research by Bannerman (personal communication, 1998) in Madison, Wisconsin, shows that 40-50% of storm water phosphorus comes from lawns that have been treated with fertilizer containing phosphorus. In Maine, most soils have enough phosphorus to keep an established lawn healthy. Thus, the logical conclusion is to encourage consumers who want to use fertilizer to change to a non-phosphorous fertilizer on established lawns and gardens.

### **Evaluation of the availability of non-phosphorous fertilizer in Maine**

During the summer and fall of 1998, the department conducted a survey of businesses that sell lawn fertilizer to the domestic market. Statewide, one hundred and eighty (180) hardware and garden centers were contacted by telephone one or more times to determine if they sold non-phosphorous fertilizer and if they would be interested in selling non-phosphorous fertilizer in the spring of 1999.

Out of all responses from 180 locations, two did have a non-phosphorous fertilizer in stock for lawns but relatively little was being sold. A store in Raymond sold about 800 pounds of non-phosphorous fertilizer in 1996, 4800 pounds in 1997 and 3200 pounds in 1998. One product sold in Raymond, "Ironite", is actually a soil supplement. This store manager has been very active in educating his customers who live in the Sebago Lakes area but he still has not sold enough to make it cost effective to ship this product in from Arizona.

At a second location, a contractor, who is entering into the wholesale market for environmentally friendly materials, has been selling a non-phosphorous fertilizer named, "Lake Saver", which is manufactured in Maine by Nutrite. This contractor/wholesaler has sold 2000 pounds over the last two years. The contractor believes that lack of consumer education is the limitation to greater sales volume.

Several retail managers and one landscaper were aware of non-phosphorous fertilizer. The landscaper stated that he does use Nutrite's non-phosphorous fertilizer near lakes. A store manager in Winthrop reported that they have Nutrite's non-phosphorous fertilizer in the springtime. Two businesses said they can order non-phosphorous fertilizers but they do so more for farmers than homeowners. Several retailers stated that they do have customers who are asking for environmentally safe or lake safe fertilizers.

The majority of the store managers surveyed showed concern for protecting the environment. The ones who were not aware of the role of phosphorous in lake water quality were given a brief explanation about the effect of phosphorous on lakes.

With the background work conducted so far and the marketing campaign planned for spring of 1999, Maine will become the leader in non-phosphorous fertilizer use for New England. . An informal survey found that Wisconsin, Michigan and Minnesota have more widespread availability and use of non-phosphorous fertilizer than Maine. This may be due to active promotion of non-phosphorous fertilizers by lake associations, manufacturers and state agencies. The consumers in Michigan, Minnesota and Wisconsin have been using non-phosphorous fertilizer for at least six years.

### **Retailers' interest in stocking a non-phosphorous fertilizer**

A total of 98 retail locations, statewide, consisting of 61 independent retailers and 37 chain stores have expressed interest in selling a non-phosphorous fertilizer in exchange for product promotion by the Department of Environmental Protection. The independently owned stores can choose to buy their products anywhere; but the larger chains are limited to purchasing from a limited list of vendors. Many stores already purchase products from Nutrite. Large chains such as Agway (11 stores) Aubuchon (22), Home Depot (2 stores), HQ (2 stores) have expressed interest in carrying a non-phosphorous fertilizer.

### **Manufacturers of non-phosphorous fertilizer**

Seven fertilizer producers were contacted and a total of five brands of non-phosphorous fertilizer will be available for sale in Maine. These five brands represent a broad range of manufacturers: from a small Maine based operation to a large publicly owned corporation. This range of manufacturers is important in order to reach the variety of retail locations from the family owned hardware store to the national chain store. In addition to what is presently being sold in Maine (Nutrite and Ironite), three more companies: Agway, Oliver Seed Company, and Lesco will supply a non-phosphorous fertilizer to Maine.

The Department of Environmental Protection has reviewed the product information and "guaranteed analysis" information for all these products, except Agway, who has not submitted their information, and has found them to be safe for use in Maine's watersheds when applied according to manufacturer's instructions. The Maine Department of Agriculture has been contacted concerning this project. Each non-

phosphorous fertilizer blend has been or is in the process of being registered with Maine Department of Agriculture, Division of Quality Assurance and Regulation.

### **Promotion of non-phosphorous fertilizer**

Retailers will be asked to reply in writing on their commitment to the non-phosphorous fertilizer campaign by stocking a brand of non-phosphorous fertilizer. The Department of Environmental Protection will pay for the promotion of non-phosphorous fertilizer by creating in-store displays, publishing an informational sheet for consumers, writing articles in newsletters and advertising in local newspapers. The advertisements will list the retail locations that sell non-phosphorous fertilizer while promoting its use. The cost of this advertising campaign is estimated to be \$5000, which will be funded by existing federal grants.

The retailers and manufacturers of fertilizer advocate creating a label to affix to each bag of non-phosphorous fertilizer to help identify the non-phosphorous product from other fertilizers. The retailers were hoping that an endorsement by the Department of Environmental Protection or the Maine legislature would be listed on this label. So far, the Maine Congress of Lakes Association (COLA) is the only party interested in endorsing the non-phosphorous fertilizer on a label affixed to each bag of non-phosphorous fertilizer. According to the retailers, COLA is not well known to the average consumer and may not increase sales substantially. In addition to COLA's label, the Department of Environmental Protection is considering attaching a fact sheet to each bag of fertilizer describing the importance of using a non-phosphorous fertilizer in lake watersheds without specifically endorsing a particular product

The Department of Environmental Protection proposes mounting this campaign statewide to ensure a large enough market for the manufacturers to see a potential for profit. The retailers will be surveyed in the late summer of 1999 to determine the volume of non-phosphorous fertilizer sales. The marketing will be evaluated and improved for the spring of 2000. In the summer of 2000 a second survey of the retailers will be conducted to determine the volume of non-phosphorous fertilizer sales. At this point there should be enough information to determine whether more than a voluntary promotion will be needed to establish the use of non-phosphorous fertilizer in Maine.

### **Recommendations**

1. DEP should continue its non-phosphorous fertilizer campaign initiated in the Fall of 1998. DEP will pay for promotion of non-phosphorous fertilizer through informational brochures, newspaper articles and advertising. Retailers are being asked for commitment to stock non-phosphorous fertilizer in exchange for this promotion. Cost of promotion is estimated to be \$5,000, to be funded through existing federal grants.
2. A Legislative Joint Resolution should be adopted backing the non-phosphorous fertilizer campaign, so that it may be referenced in promoting the use on non-phosphorus fertilizer.
3. A mandatory program should not be established at this time. DEP will survey retailers in late summer of 1999 and 2000 to determine success of campaign to determine if a mandatory program is warranted.

## Appendix

### References

Bannerman, R.T., Owens, D. W., Dodds, R. B. and Hornewer, N.J. (1993) *Sources of Pollutants in Wisconsin Stormwater*. Wat. Sci. Tech., 28(3-5), pp.241-259.

Bannerman, R.T., 1998 Personal Communication.

Barten, J.M., and Jahnke, E. 1997. *Suburban Lawn Runoff Water quality in the Twin Cities Metropolitan Area, 1996 and 1997*. Suburban Hennepin Region Park District Report

Dennis, J. 1986. Phosphorus Export from a Low-density Residential Watershed and an Adjacent Forested Watershed. Lake and Reservoir Management, Volume II

Ellis, B., and Childs, K. 1973. *Nutrient Movement from Septic Tanks and Lawn Fertilization*. Tech. Bull. 73-5 Department of Natural Resources, Lansing, Michigan.

Michael, H., Boyle, K. and Bouchard, R. 1996. *Water Quality Affects Property Prices: A Case Study of Selected Maine Lakes*. University of Maine, Maine Agricultural and Forest Experiment Station Misc. Report 398.

Schuetz, J.F. 1998. *Economic Values and Impacts Associated with Access Users' Recreational Use of Maine's Great Ponds*. Thesis for the Degree of Master if Science, Graduate School, University of Maine.

Steuer, J., Selgib, W., Hornewer, N., and Prey, J. 1997. *Sources of Contamination in an Urban Basin in Marquette, Michigan and an Analysis of Concentrations, Loads and Data Quality*. U.S. Geological Survey, Water-Resources Investigations Report 97-4242.

### *Description of non-phosphorous fertilizer products to be sold in Maine*

Nutrite is a local manufacturer and has been selling a non-phosphorous product in Maine. Eco-cycle has been wholesaling their product. Now, Eco-cycle has initiated a full scale marketing campaign to sell the Nutrite product in a reused plastic buckets obtained from Hannaford. Eco-cycle plans to set up the marketing displays in as many of the stores who will sell their product.

Agway will manufacturer a non-phosphorous fertilizer at their plant in New Hampshire and distribute only to Agway stores.

Lesco a large publicly held corporation, doing business across the country, manufactures a non-phosphorous fertilizer. Presently, Lesco does sell other products to Home Depot, and HQ, so the infrastructure is set for the addition of non-phosphorous fertilizer.

WalMart only purchases fertilizer from Scotts, who has refused to offer non-phosphorous fertilizer to the consumer market in spite of the fact that they market a commercial non-phosphorous fertilizer for golf courses and agriculture.

Oliver Seed Company of Vermont has formulated a non-phosphorous fertilizer and is including a write up about the non-phosphorous fertilizer use in Maine for its 1999 catalogue. Paris Farmer's Union will be retailing and wholesaling the Oliver Seed non-phosphorous fertilizer in Maine.

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*Suppliers of Non-Phosphorous Fertilizer*

Please note this information and prices are preliminary and could be subject to change.

Manufacturers

LESCO - Contact Bill Weagly (800)321-5325 ext. 2405  
Product description: Professional Turf Fertilizer 24-0-11 PolyPlus Coated  
Item number: 26538  
Unit price: 50 lbs. \$9.36 (wholesale)  
Minimum purchase: 1000 lbs. (6 pallets)

NUTRITE - Contact Lou Jacobs 933-4334  
Product description: 22-0-22 used on golf courses in Maine  
Unit price: 50 lb. Bag \$16 (retail)  
Minimum purchase: one ton of any Nutrite products

AGWAY (only available to Agway dealers)  
Contact Steve Lajoie 924-6671

Wholesalers

ECO-CYCLE - Contact George Lord 623-3148  
Product description: Lake Saver 10-0-5 with lime has been sold by Sylvester Excavating in central Maine  
Unit price: 50 lb. Bucket \$20.00 (retail)  
25 lb. Bucket \$12.00 (retail)  
Minimum purchase: none

IRONITE - Contact Commerce LLC (800)289-0982  
Product description: soil supplement, 1-0-0 and trace elements, has been used in the Sebago Lakes region  
10 lb. \$6.41 per box retail 5 boxes per case, minimum order 1 case  
25 lb. \$9.55 retail minimum 84 bags per pallet  
40 lb. \$13.07 retail minimum 50 bags per pallet  
\$500 min order of any product

PARIS FARMERS UNION - Contact 743-8976  
Product description: Phosphorous Free Lawn fertilizer 10-0-4 with lime manufactured by Oliver Seed in Vermont  
Unit Price: 50 lb. \$6.19 (retail)  
25 lb. \$3.39 (retail)

Product description: 50% Organic Phosphorous Free Lawn fertilizer 10-0-4 with lime N manufactured by Oliver Seed  
Unit Price: 50 lb. \$10.95 (retail)  
25 lb. \$5.79 (retail)  
Call for wholesale prices and minimum order amounts