

Final Project Report
Groundwater Research and Development Grants
Oregon Department of Agriculture
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1. Project title

Development and Delivery of Home Lawn and Garden
Recommendations to Promote Groundwater Protection

2. Principal investigators

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3. Project Goals and Objectives

The goal of this project is to develop and promote home horticulture recommendations for the application of fertilizer and pesticides consistent with the OSU Extension Service Water Quality Initiative for groundwater protection.

Objectives:

1. Develop specific home horticulture fertilizer and pesticide recommendations for lawns and home gardens that are consistent with groundwater protection.
2. Print recommendations as Extension Publications for distribution to the public.
3. Develop materials for use in training Master Gardeners and the public in Groundwater Protection and Gardening Practices.
4. Train Master Gardeners to promote the new recommendations with the public.

4. Proposed Accomplishments

Completion of this project will result in:

- A reviewed OSU Extension Service home lawn and garden publication addressing fertilizer and pesticide practices consistent with groundwater protection for distribution by County Extension Offices and promoted by OSU trained Master Gardener volunteers.
- Master Gardeners in at least 15 Oregon Counties trained in groundwater protection practices.
- Permanent displays for use at county fairs and community events promoting gardening practices to prevent groundwater pollution.
- A slide set and other instructional materials for use by Master Gardeners in making public presentations.
- A core team of trained Home*A*Syst Volunteers with a strong gardening background to target the rural non-farm population.

5. Project Activities

A. New Extension Service Publications. A review of the scientific literature pertaining to groundwater pollution from turf grass was conducted by two Master Gardeners using references provided by Tom Cook, Extension Turf Grass Specialist. A Master Gardener who happened to be an OSU student helped with a search in the campus library. About 10 more Master Gardeners searched the World Wide Web for Extension Service publications from other states and additional scientific reports dealing with gardening practices to protect groundwater. (The count of people actually doing this is fuzzy because I think sometimes a spouse or additional Master Gardener was working with my primary contact, and in other cases I had repeated contact with a Master Gardener, but I don't know how much work they actually did.) After reviewing the literature, we decided to focus on nitrate from lawn and garden fertilizer as the area where we were at highest risk. Gail Glick Andrews drafted two proposed Extension circulars: One explaining the [nitrogen cycle](#), relating gardening practices to the potential of nitrate leaching to the groundwater; and a second providing [six general garden management strategies](#) to protect groundwater, each with several specific recommended practices. Two Extension Soil Specialists, three county Master Gardener coordinators, and several Master Gardeners reviewed the drafts for content and usefulness in the Master Gardener program. An Extension Communications editor has been working closely on this project, coordinating this set of publications with the new nutrient management guide for home landscapes (not part of this project). Layout and art will be done by that office. The final

printing of the documents is scheduled for January 1, 1998 so that they may be used in the training of new Master Gardeners throughout the state. About 130 hours of Master Gardener volunteer time were contributed to this part of the project.

- B. New Master Gardener Training.** At the time of the original proposal, it was projected that the new publications would be ready for new Master Gardener training during the winter/spring of 1997. Even though the publications were not available, Groundwater Friendly Gardening training was given to over 500 new Master Gardeners from 18 different Oregon counties. About 200 of these trainees took Home*A*Syst packets to evaluate their own property for risk to groundwater.
- C. Gardening and Groundwater Displays.** Five counties Master Gardener Associations were allocated \$100 each to assemble portable displays that promote gardening practice that reduce risks to groundwater. The counties and topics are:

Benton County: Groundwater-Friendly Gardening (based on the general handout used for Master Gardener training)

Curry County: Landscaping with Native Plants to Protect Water Quality

Umatilla County: Nitrogen Fertilizer and Groundwater Nitrate

Union County: Twelve Simple Things to Protect the Groundwater Related to Gardening. (Based on the Twelve Simple Things to Protect Well Water publication.)

Yamhill County: Selecting the Safest Garden Pest Control Option (including evaluation of risk to water quality, leaching of chemicals, etc.)

The displays are in various stages of completion and I understand that they will all be completed in the next couple of month. This aspect of the project has progresses much more slowly and required considerably more motivating and directing than I had anticipated. In most cases, county Extension staff has done a substantial amount of the work. Master Gardeners have shown much less enthusiasm to actually do the work than is typical for them as a group.

The summer fair season had passed, and none of the displays were completed, in part because local groups were expected to be self-directed after committing to do the displays. Through the fall, they have been encouraged to continue working and additional direction had been provided. The volunteers will be allowed to work on the projects at their own pace with some ongoing guidance, under the assumption

that eventually we will have quality products emerge.

- D. Instructional slide set.** A Umatilla County Master Gardener and his wife spent several days and shot three rolls of film from a list of illustrations that were needed. Text slides with illustrations were developed. The OSU Computer Media Center was contracted to help with computer illustrations and final production of slides. A lecture of set of slides has been assembled which covers nitrogen fertilizer management, water conservation in the lawn and garden, and other gardening practices related to groundwater protection. The set was used for a public lecture sponsored by the Umpqua County Master Gardeners and has been reserved for a lecture to be given by a Benton County Master Gardener in January.

There seems to be interest and a need to have more slides available from which talks can be given. The consensus among those who would use the slides is that there is no need for a scripted slide set, but instead a good collection of slides from which the speaker can develop his or her on talk to fit the needs of the audience. This had developed into an on going project and the slide collection will continue to grow.

- E. Home*A*Syst Volunteers.** Two-day Well Water Training courses were held at Oregon State University in June 1996 and again in September 1996. A total of 56 individual were trained in the use of the Oregon Home*A*Syst materials. About 2/3 of the trainees took the course as volunteers who will then help with groundwater protection education in their own community. Fifteen of the volunteers are also Master Gardeners.

6. Conclusions

All of the objectives of the project have been met. Groundwater education had become an integral part of the Master Gardener program in Oregon. New Extension Service publications offering gardening advice consistent with water quality protection are being printed.

Unforeseen outcomes include: (1) the recognized value of using Master Gardeners as research assistants, especially reviewing documents that they will be using with the public, but also for other tasks; (2) the education of the Extension Communications editor to include a water quality considerations in publications from other authors who may not have considered them; and (3) the cooperation with other Extension Specialists who deal with lawn and garden recommendations.