

Research evaluations of and outreach for methyl bromide alternatives in conifer seedlings and herbaceous perennials – a summary of progress in 2004

Author

Diane Brown-Rytlewski

Project team members

Diane Brown-Rytlewski, Robert Richardson, Michael Brewer, Bernard Zandstra, Suzanne Thornsby, Dennis Fulbright, William Kirk, George W. Bird, Thomas Dudek,

Cooperators

South West Michigan Research and Extension Center (SWMREC)
Michigan Department of Agriculture
Michigan Nursery and Landscape Association
Michigan Methyl Bromide Alternatives Task Force
Michigan Seedling Growers Association
Michigan Christmas Tree Association

Funding

USDA CSREES, Methyl Bromide Alternatives

In fall 2003 a grant was awarded by USDA CSREES for a second methyl bromide alternatives research and outreach project to evaluate weed control, soil-borne plant pathogens, changes in soil microorganisms in plant pathogen treatment plots, economics of adopting alternatives, and outreach and education for growers. Both herbaceous perennials and seedling conifers are under evaluation. The project runs through fall of 2006. More detailed information some of the individual studies is contained in separate reports.

Trial plots at Southwest Michigan Research and Extension Center are now established to evaluate soil-borne diseases, weeds and nematode populations. Disease organisms are established in the plots that were inoculated in fall 2003. Some fumigant treatments were applied in fall 2004; remaining treatments will be applied in spring. In addition to conventional fumigants and fungicides, three biofungicides are under evaluation. Following planting, various disease development and severity ratings will be taken. Nematode and other soil organism populations will be quantified and measured over time.

In seedling conifer weed control trials, crop injury was low with all herbicides tested; weed control was generally good, but dependent upon treatment and weed species. Four herbicide treatments were more effective than methyl bromide and controlled at least 80 percent of all weed species present. Crop growth was equivalent or greater in herbicide treated plots compared to methyl bromide. In herbaceous perennial weed trials, weed control was generally fair to good with all treatments. No treatment, including methyl bromide, controlled more than 70 percent of all weeds present. Heavy spring rains may have reduced methyl bromide effectiveness. Herbicide results have been shared with growers at several meetings this year.

Economic assessment of the alternatives for methyl bromide use is a crosscutting objective in the project. Coordination meetings were set up with each of the scientists involved with the physical experiments and other project participants. Results from these meetings established the best way to collect data was to first gather economic information based on current grower practices to develop a baseline enterprise budget. This budget can serve as input to the CUE process and a budget tool for individual growers. Separate surveys were drafted for herbaceous perennial and seedling growers. Surveys have been approved by University Committee on Research Involving Human Subjects. Preliminary results

were presented on September 17, 2004, at the annual meeting of the Michigan Seedling Growers Association; an ad hoc committee was formed to facilitate data collection and improve grower participation. Perennial growers will be surveyed in winter through spring 2005. A form to assess plug-based production was discussed with a Michigan grower, and appointments are being made with additional growers outside Michigan to interview them about these systems.

A meeting of the Methyl Bromide Alternatives Task Force was held in January 2004 to advise stakeholders of progress on the grant, get input and develop educational activities for the upcoming year. Quarterly meetings were held with team members on the grant to gauge progress on objectives and facilitate work done on the project. Updated research information was included with CUE proposals filed in August. A newsletter was sent in September to task force members. A field day for growers was held in October 2004 to familiarize them with the research plots at SWMREC. Methyl bromide alternatives grant progress reports for 2004 are being recorded on CD and will be distributed to industry stakeholders in February.

As research progresses and results of alternatives to methyl bromide under evaluation are shared with industry, we expect that these alternatives will be more widely adopted. Telone is already gaining greater acceptance among growers as a workable alternative to methyl bromide. Some of the herbicides investigated as alternatives have received new or broader labeling for horticultural crops and use of them is increasing. As growers receive more information about the costs of adopting alternatives, and are able to translate the economics into workable practices for their own operations, adopting alternatives should become more widespread.