Methyl bromide alternatives indicated for North Carolina tomato production

February 3 2009

Methyl bromide (MeBr) is a highly effective broad-spectrum fumigant used extensively in U.S. agriculture to control a wide variety of pests. Under the Montreal protocol of 1991, however, MeBr was defined as one of the chemicals that contributed to the depletion of the stratospheric ozone layer, resulting in an incremental reduction in the amount of MeBr produced and imported in the U.S. In January 2005, a total phase out of MeBr (except for emergency and critical-use exceptions) was imposed.

The U.S. Department of Agriculture has indicated that the phaseout of MeBr as a preplant soil fumigant may have substantial impact on the production levels of many agricultural crops. No known single alternative fumigant, chemical, or other technology exists that can readily substitute for MeBr in efficacy, cost, ease of use, availability, worker safety, and environmental safety.

Fresh-market tomatoes were planted on 124,400 acres in the United States in 2007, with a gross production value of almost $1300 million. Southeastern states, including Georgia, North Carolina, South Carolina, Tennessee, and Virginia, accounted for about 17% of the total tomato production in the U.S. Tomatoes accounted for 25% of the use of MeBr in the U.S., making tomato growers one of the main groups impacted by the MeBr regulations.

In a recent study published in the October 2008 issue of *HortTechnology*, researchers at North Carolina State University and the USDA analyzed

the economic feasibility of chemical alternatives to MeBr in the plasticulture production of tomatoes in the mountain region of North Carolina.

Lead authors of the study Olha Sydorovych and Frank Louws explained the methodology, stating that they first estimated the costs and returns associated with growing, harvesting, and marketing tomatoes in a plasticulture production system including preplant fumigation with MeBR. Second, they evaluated the economic feasibility of the alternatives to MeBr using a partial budget methodology.

The study results indicated that technically and economically feasible alternatives to MeBr for tomato production exist in growing conditions similar those of Fletcher, NC. Howeer, the researchers advised growers to estimate individual production, harvesting, and marketing costs based on their own production techniques, price expectations, local supply of labor, and market situation before selecting an alternative preplant fumigant, noting that "actual costs and returns will vary from grower to grower due to market situation, labor supply, age and condition of equipment, managerial skills, and many other factors."

The researchers anticipate a need for further research and better infrastructure to enable more commercial farmers to have the capacity to adopt alternatives to MeBr. "As more on-farm research and demonstrations are conducted, complimented with public and private technical support and extension, it is anticipated that growers will implement alternative pest management practices on larger acreage, moving toward greater reliance on one or more of the alternatives documented in this study", they concluded.

The complete study and abstract are available on the ASHS HortTechnology electronic journal web site: horttech.ashspublications.org/ … nt/abstract/18/4/705

Source: American Society for Horticultural Science