AN ALTERNATIVE TO FUMIGATION OF CROPS WITH METHYL BROMIDE: USING PROPANE

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Methyl bromide is routinely used to fumigate agricultural soil to control nematodes. Many alternatives have been explored with limited success. In 2006, the propane industry, led by the Propane Education and Research Council, issued a request for proposals to identify promising methods to use propane-based technology to control nematodes in soil.

A multidisciplinary team responded with a unique approach. They wanted to see if equipment used in the construction industry to thaw frozen ground could be utilized in strawberry and tomato fields. The intent is to heat soil to 50-60^{0}C.

There are several different types of equipment and methods to heat fields.

- Direct-fired make-up air heaters are positioned alongside the field and fabric ductwork is placed on the soil. A large tarp is placed over the ductwork. The hot air circulates under the tarp at high rates to promote rapid heat exchange into the soil.
- Trailer-mounted boilers provide a heated water-glycol solution to series of hoses that are placed on the soil. An insulating blanket is placed over the hoses.

There are numerous technical issues that will determine the efficacy and cost-effectiveness of this approach. Extensive laboratory and field tests are planned. There are many challenges. However, if there are attractive applications, commercialization will be very rapid. There are in place large fleets of this type of equipment that virtually sit idle all summer.