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at the soil surface and dispersed by rotary tiller. No plastic tarpaulins are needed. The rig above is using the Cantrix non-returnable container applying fumigant just ahead of the tiller's blades.

New Gelled Soil Fumigant Dispersed by Rotary Tiller

A unique soil fumigant system developed by Ferguson Fumigants, Inc., Hazelwood, Mo., promises to improve soil pest control throughout the country. Chief advantage of the system is its ease of application. The gelled methyl bromide-ethylene dibromide formulation is applied at the soil surface and dispersed by rotary tiller. No plastic tarpaulins are needed.

Crucial to the success of the new system is a gellant and vaporization rate control material, FMC Corporation's AVIBEST-C, microcrystalline silicate.

J. Carl Dawson, president of Ferguson Fumigants, who invented the new rotary tiller fumigant system,

said recently that the system would have been ready earlier if a completely satisfactory gelling agent had been available.

"Some of our early gelling agents lacked stability," he said. "Another problem was caking and plugging in equipment lines. AVIBEST-C microcrystalline silicate turned out to be ideal in all respects for our system."

Basically the rotary system works like this: the gelled soil fumigant is packed in Cantrix 4.3 gallon cylindrical containers seven inches in diameter and 28 inches long. This is a non-returnable container with 85 p.s.i. working pressure. (Methyl bromide has always been shipped in heavy, returnable steel cylinders, which require handling cost and return freight.)

The Cantrix container is mounted on application equipment. Compressed air forces the expulsion of the fumigant through a tube. The fumigant moves to a ground wheel metering unit, and is then delivered to a point on the surface of the untilled soil directly in front of the tiller's rotating blades.

The tine or chisel method of applying soil fumigants, which has been used previously, injects fumigant about six or eight inches beneath the soil. This works satisfactorily in light, sandy soils but not in heavier soils, because uniform

permeation of heavy soil is not achieved. The advantage of the two gelled fumigants using AVIBEST-C is that one is suitable for this tine or chisel-lighter soil treatment, while the other is useful in the new rotary-heavy soil application.

Four primary pests are controlled by soil fumigation techniques — weeds and weed seeds; parasitic nematodes; soil-borne bacterial diseases, and soil-borne fungus plant diseases.

Dawson feels that the new gelled fumigant and the new method of application will cut the overall costs of fumigation. "More important, the utility of the new method for all soil types makes it a truly universal fumigant system."

In explaining the benefits of the new system, Dawson said that gelled methyl bromide formulations for soil fumigation evaporate at a slow, controlled rate, allowing longer, more uniform exposure of the soil-borne pests to the toxicant without the need of a polyethylene tarpaulin. The formulations may be tailored to the texture of the soil for maximum effective exposure.

Rotary tillage incorporation of the fumigant assures homogeneous dispersion of the fumigant in the soil. This makes it no longer necessary for a period of time to elapse before the fumigant has completely penetrated the soil. The fumigant is mechanically dispersed and the organisms are immediately exposed to the fumigant. Accurate metering of the fumigant into the soil assures maximum benefit with greatest economy.

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Issue**