DAZOMET, A METHYL BROMIDE ALTERNATIVE

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Dazomet, a chemical developed by BASF in 1952, and formulated as a microgranule in 1984, is a viable alternative to methyl bromide for soil fumigation. Dazomet (trade name: Allante™ soil fumigant) is a MITC generator which has a broadspectrum of activity in controlling soil diseases, nematodes, insects and weeds.

An *Experimental Use Permit* for strawberries, tomatoes and peppers is expected in the fourth quarter of 1995. This compound has had some history of producing less than optimum results under some field conditions. These less than optimum conditions have been paramitized. In nearly every case where results have not been good, lack of adequate water has been pinpointed as a limiting factor. The lack of sufficient water was found to be the major factor when less than optimum performance occurred under some field conditions. Sufficient water to activate the microgranule is the key to a successful fumigation.

Table 1 shows the relative quantities of water in various soils as it relates to percent field capacity

Table 1. Water needed to raise 6 inches deep soil to specified field capacity in acre inches.

	Targeted Field Capacity			
Soil Type	20	40	60	80
Sand (100% sand)	.07	.14	.21	.29
Norfolk Sand (85% sand)	.24	.48	.72	.96
Cecil Clay Loam (75% clay)	.47	.94	1.41	1.88
Organic Sand (15% O.M.)	.55	1.10	1.65	2.20

To obtain complete breakdown of dazomet, soils need to be wet, 60-80% of field capacity for sandy soils and 50% or better for others immediately after application. Under dry conditions, dazomet microgranules will remain inactive and give poor results and crop injury when the water is applied to the crop.

As an illustration, a study reported from California in 1993 will be discussed (9321SCA013). The clay soil moisture at time of application was reported at 10%. A radish bioassay 17 DAT showed that no active dazomet remained in the soil yet tomatoes were heavily damaged when planted. This problem has occurred also on sandy soils with 40% moisture, especially when they were bedded

and tarped immediately after application without adding water. Low organic sands drain very quickly and water retention on the outer periphery can be limited during the 24- to 72-hour critical period for dazomet/MITC conversion resulting in less than optimum results.

Based on these parameters an EUP protocol has been developed to compare ALLANTE to methyl bromide in grower fields. Tomato, pepper and strawberry plantings will be treated in California, Florida, North Carolina, and Virginia and/or New Jersey late in 1995 and throughout 1996. The protocol calls for close monitoring of the soil moisture before and after treatment. Bioassays for dazomet dissipation will be taken, and nematodes, weeds and disease will be evaluated. Yield data will be obtained from each site. Methyl bromide checks will be included as a comparison at all sites.