BASAMID—UPDATE

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This paper is an update of the paper (1) presented at the IPPS Southern Region during their 1987 meeting in Tampa, Florida. The soil sterilant, Basamid, is labeled for use in the U.S.

Basamid-granular (active ingredient: Dazomet) is a product from BASF in the Federal Republic of Germany, and when incorporated into the soil has nematicidal, fungicidal, and herbicidal effects. It therefore is classed as a chemical soil sterilant.

The first testing at Zelenka Nursery was conducted by our Research and Development Department in October, 1985, in the hope of finding a substitute for methyl bromide. The latter product had not given us satisfactory weed control and the per acre price, in western Michigan, had steadily increased each year. The Basamid R&D tests have proven satisfactory and this product is now an accepted production practice of Zelenka Nursery. One of our most serious weed problems, particularly in seed/transplant beds, is yellow nutsedge (*Cyperus esculentus*) which escapes methyl bromide treatment.

From October, 1985, through our most recent application on October 3, 1988, we have made very few changes and I will share them with you. In our area of western Michigan, we feel the ideal time of application is from September 15th to 30th. The calendar dates are secondary to the soil temperatures, but this allows the placement of soil fumigant on our extensive "Calendar of Events" for that nursery department. From our experience, soil temperature (54 to 60°F) is the key for effective herbicidal results at our rate of 310 lb/A. At that rate we have observed no soil pH change.

In September, 1988, we treated 10 acres and completed a second 10 acres on October 3, 1988. Seed beds comprise 8 acres and transplant beds the balance.

We prepare the sites by rototilling 8 to 10 in. deep, applying the Basamid with an Orbit-Air Gandy Spreader (Model #6224), and then sealing with ¼ in. of irrigation water. If there is no rainfall, we re-apply water every 2 days to assure moisture in the top soil area. The water seal completely eliminates the need for a plastic seal. Seven to 10 days after application, with the soil temperature about 50°F, we re-till to a depth of 4 to 6 in. We then take soil samples from the re-tilled areas and sow lettuce seed to observe germination and check for inhibition. The label suggests cress seed (*Lepidium sativum*), but lettuce works just as well.

I alluded earlier to our nursery's yellow nutsedge problems. Our

experience to date has been favorable, certainly not 100%, but satisfactory. In fallowed areas, prior to tillage, we have had in some areas almost a yellow nut sedge meadow. After fumigation with Basamid, we see definite partial eradication and some suppression. To date, we have not found a herbicide we can safely apply over the top of a wide range of woody ornamentals, without the danger of potential plant injury and still eliminate yellow nut sedge. I believe we have tried them all!

I mentioned our use of the Orbit-Air Gandy Spreader earlier. We are deeply indebted to Wayne Lovelace who *shared* his input into our *seeking*. Since Basamid is a micro-granular formulation, the spreader equipment is vitally important. I also acknowledge my dear friend, Margaret Scott (GB&I Region), for sending me data relative to the product's use in Europe and the Far East. The advice and counsel from these two Society members is deeply appreciated.

In conclusion, as I mentioned last year at the Southern Region conference, this product has given us longer weed control, after application, than methyl bromide. We are seeing some suppression to yellow nut sedge nutlet germination and it is definitely cost effective. Not only is the per acre cost attractive ($930 versus $1,100), but there is the added labor cost saving in not disposing of the methyl bromide poly tarps. When the above costs are added to hand weeding, and reduced labor costs due to longer weed control, this product is cost effective.

I would urge any of you interested in this topic to do some testing at your nursery. If I can be of assistance, please call on me. Let all of us truly live the Society's motto: "To Seek and To Share".

LITERATURE CITED

1. Shugert, R. 1987. Fumigation-Basamid, *Proc. Inter. Plant Prop. Soc.* 37:543–545.

BRUCE BRIGGS: Is the gas heavier or lighter than air? Because of possible ground water contamination problems, you want to make sure that it goes up and not down.

RALPH SHUGERT: I have two papers from overseas that address its use and ground water contamination was not a problem.

VOICE: Is there a difference between heavy and light soils on effectiveness, and what is a safe distance for planted beds.

RALPH SHUGERT: I have only used it on sandy soil and do not know its success on heavy soils. We let some get into a *Thuja occidentalis* 'Pyramidalis' windbreak and it did not affect the growth of that hedge.

FRANK GOUIN: We incorporated it 2 in. and got no killing below 2½ in. It tends to be light and come up. Basamid works best on light soils. We also observed that it gives excellent control of nutsedge. After application, drag it, roll it, and give it a water seal.