

CHEMICALS HELP CONTROL WEEDS IN CONTAINERS

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We, like all businessmen and — in particular — those that deal with nature, are faced with many problems — weather, labor, finances, and one universal bug-a-boo for the agricultural entrepreneur, WEEDS

Weeds are a problem because they affect plant growth, cause unsightliness of our nursery, and present a labor and financial burden. It is hard to say what single factor really pushed us to turn to the bags of chemicals that we had sitting in the back of the shed but never used. We had an experience with a herbicide about 5 years ago. Before the use of the herbicide, we had 50 weed species, and after its use we had 5 species of weeds present. These 5 together were more of a problem than the 50 we started with. I think the one thing that pushed us to the breaking point was our desire to use one of the slow-release fertilizers that cost somewhere around \$15.00 per bag. We could not justify sending labor into the field to pull weeds and at the same time pull and eventually throw away this costly fertilizer.

Our nursery is similar to yours in most ways but vitally different in many respects. What I am about to say works for us, in our particular micro-climate. What I recommend may not work at your place, so check it out first. I am sure that most of you are in the same boat that we are in — everything that you have in the world is sitting out in those fields, so please run your own trials before throwing around a bunch of chemicals you have read or heard about. One other small point that I wish to make is that no herbicide will do you any good while it's still in the bag. I have told friends the success that we have had with a particular chemical, and they answer something like . . . "Yea, I've got some in the barn, but it has shown me nothing yet." Of course it hasn't. They only work when applied in an accurate and timely manner. In general, we use three chemicals, methyl bromide, Lasso and Casoron, to help us in controlling weeds in containers.

Methyl Bromide. Since our container mix contains 20% soil, our first effort at control starts by gassing the soil with methyl bromide at the rate of 1 lb/cu yd. This gives us control of existing weed seeds and gets us off to a fairly clean start.

Our real problems start after the containers have been in the field for about 5 to 6 weeks. Weed populations develop, and we have to start the costly task of hand weeding. I can't give you a dollar figure per plant or per acre of the cost involved in hand

weeding. The only way I can judge it is that it took four women weeding all the time from March to November, plus additional help when things really got bad, to keep the weeds under control. Even then we really were not clean. We don't have a lot of plants to take care of, somewhere in the neighborhood of 250,000 1-gal and 50,000 5-gal cans. Many of you that have more containers use no herbicides and keep clean with less help. However, in our situation — thinking my employees are very conscientious and work pretty hard most of the time — we just could not keep up with the weeds.

We were crying the blues all over the place and asked for help from the local Virginia Truck and Ornamental Research Station. We supplied the plants, and research was done at our place by Dr. Henry Wilson, a vegetable man by trade. Research was conducted on a wide variety of plant material, using about 20 different herbicides, one of which was Lasso, a corn herbicide. On the basis of this research, Lasso 10 G was selected as a prime candidate for a closer look.

Lasso. After a little work on our own and a few mistakes, we decided to go with Lasso 10 G. I might add that sometimes mistakes can be your best friend. In a herbicide trial, I applied the small amount of chemical needed by use of a salt shaker. In one of my calculations for the Lasso plot, I let a decimal slip the wrong way and, in fact, applied the material at 10 times the suggested rate. Boy, I was mad at myself at first, but the plants showed no signs of being damaged, and a mistake turned into a real confidence builder.

The rate of Lasso 10 G that we use is 40 lbs/A as it comes from the bag. The frequency of application is not a hard and fast rule. Generally I wait until a block is planted and treat the entire block at one time. The first application is about 3 weeks after planting. I have gone in much sooner, but I prefer to wait. As a good rule of thumb, we apply the material every 8 weeks, starting in March and continuing until September. I try to put the material down on the entire farm in one pass, so to speak. If a planted block has received Lasso less than 5 weeks before, I do not re-apply to that block, and it will have to go an additional 8 weeks before it receives a second treatment. So in some cases, plants receive a treatment as close as 6 weeks and in others it may go 12 or 13 weeks.

Application is made to the plant beds using a broadcast rotary applicator. I caution you to calibrate your applicator prior to every use. Lasso is available in both granular and liquid formulations, but we prefer the granular formulation because it only takes one man to do the job, and it is easier than dragging hoses and working with nozzles and pumps. The only problem that we have is that Lasso 10 G is a very fine granular material and on

windy days there is a problem in getting even distribution. We use it on most all our plants — all hollies, ligustrum, pines, white flowering dogwood, all junipers, yucca, magnolia, and cleyera.

Almost all of the plants that we propagate are started as cuttings taken from plants growing in our fields and have been treated with Lasso. We have not noticed any change in the rooting of plants treated with this chemical.

We have been more than pleased with the results so far. Now after 2 years of testing and 2 years of use, I am even more excited with the results than at first. We have not been able to eliminate all weeds, in particular the tough broadleaf ones such as clover. By elimination of most grasses, we have decreased our weeding activities to two women and they are not on weeding exclusively. From our experience, Lasso deserves a close look in your herbicide program. **Caution:** Lasso should not be used in greenhouses; severe damage has been reported from such use.

Lasso presents one big problem, however, that I would like to share with you. This material is not registered for use in ornamentals, and I am quite confident that it never will have a label for use on ornamentals. What I have just given may be against the law. Pesticide legislation is going to get worse before it gets better, and I am not sure how much longer we can use this material. Some official may come and close me down tomorrow, but if a few of you in this room try it and like it and you share it with a friend, then maybe someday our market for this material will be large enough to encourage the manufacturer to label this chemical for our use.

Casoron. We have been using this herbicide on *Pyracantha* spp. for the past 5 seasons. Once a year, as a general rule in late January or early February, we apply the granular form, using a broadcast application at the rate of 120 lb/A. We have had excellent results, requiring only touch-up weeding. I am happy to say we never weed firethorn.

Prior to last year, we were using a higher rate of Casoron and observed a yellow leaf margin. This yellowing did not hinder growth nor the rooting of cuttings taken from affected plants. The only real problem came from customers wondering if they had received a new special kind of pyracantha. This year at the 120 pound rate, I truly had to hunt for an example of plants with yellow leaf margins.

This leads me to another interesting point that I would like to make. Our using Casoron and practically eliminating weeds in pyracantha has proved to be a morale booster for my help. When your workers know that you realize what a terrible job weeding

is, especially in thorny or prickly plants and they can see that you care and are trying to help them, it is truly an indirect benefit to your business.

MODERATOR FRETZ: Thank you, Charley; your presentation is a first for this Society as far as I am aware of. I thought you did a good job of indicating the need for calibration of equipment used for application of herbicides. Our next speaker is Dr. Elton Smith who will talk about chemical weed control in lining-out beds.

CHEMICAL WEED CONTROL IN LINING-OUT BEDS

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INTRODUCTION

Weed control in lining-out beds has always been expensive, since weeds have been controlled for the most part by manual labor. With beds usually composed of small plants, weeds must be removed frequently to reduce the competition primarily for light, but for moisture and nutrients as well. Although, women and teen-agers have been used extensively for weeding the labor costs have steadily increased to well over the \$600/A/yr for weeding field stock as reported by Johnson in 1962 (1).

In recent years, pre-emergence herbicides have been used extensively by nurserymen in field stock but not in lining-out beds. Among the reasons for limited use in liner beds are: 1) fear of herbicide damage to small plants with a limited root system; 2) with large numbers of plants in a small area, concern that a mistake will eliminate a future crop; 3) often, lining-out beds contain numerous cultivars of plants and herbicide selection becomes more difficult; and 4) certain herbicides such as Treflan are not as effective in beds amended with peat or other organic materials.

Research workers have shown that herbicides can be safely used in lining-out beds (3, 4) with savings in labor of up to 70% (2). The objective of studies conducted in liner beds in commercial nurseries in Ohio for the past several years have been to determine those herbicides which will result in satisfactory weed control over an extended period of time with a minimum of plant injury.