

other tests failed to give good stands because mildew forms on the grafts. We have attempted trials dipping grafts in Captan Fungicide (5 $\frac{1}{3}$ tablespoons per gallon), blowing terra-clor dust into the bag without good results. Callusing is very slow in the poly bags.

For the past four years we just pack in poly bags and kept them in cold storage. Average of 13 percent better stands than when we callused the grafts in shavings.

CASE HOOGENDOORN: At the time you line out these lilac grafts are they callused?

MODERATOR SHUGERT: We will have our question period after the next speaker. Thank you very much, Don, for a very nice presentation. Our next speaker, speaking on "Use of Simazine on a Limited Scale" Klas Van Hof, Van Hof Nurseries, in Rhode Island.

USE OF SIMAZINE ON A LIMITED SCALE

KLAAS VAN HOF
Van Hof Nurseries
Portsmouth, Rhode Island

I want to emphasize that care must be taken in the application of Simazine 80W. Our application is usually on the light side, and we do not try to attain 100% control for twelve months. It is our belief that if we can get reasonable control for the Spring and early summer months, that this gives us the opportunity to exert all our efforts on shipping and planting without the fear of being choked with weeds. We normally apply Simazine in the later part of November on plants that have been established for one year. I have no doubt that with another application in the Spring we could get that 100% control, but we feel that the chemical is relatively new and hasn't been tested long enough to make us feel that there will not be a build-up.

We have used Simazine 80W for five years and have always had complete control of chick-weed, most of the fall grasses, and the early summer weeds. Although Simazine is primarily a pre-emergence herbicide it will eradicate mature chick-weed. I would like to add that we start cultivating as soon as we can get the tractor in the fields in the Spring. We attempt to cultivate once every ten days. Of course sometimes this is impossible. In spite of this constant cultivation we are practically weed-free until August. By this time our application has lost its effectiveness, and we have to employ mechanical means towards the elimination of weeds.

I would like to state at this time the importance in the method of application. It is my belief that the reason many nurserymen have had unpleasant experiences with Simazine is because of careless methods of application. Many times failures occur because the operation is left in charge of an employee who

does not even understand the basics in arithmetic. Usually double-checking measurements, weights, etc. will be sufficient to pick up a simple error.

We use Simazine wettable powder at the rate of 3 lbs. per acre. The recommended dose for our soil type would be about 3.75 lbs. per acre. Our 200 gallon spray tank is filled with 190 gallon of water and 15 lbs. of Simazine 80W. This will treat five acres.

A Tee-Jet nozzle #6506 is used, spaced 20" apart on the boom and 22" above the soil level, maintaining 30 lbs pressure and moving at the rate of four m.p.h. We have 12 Tee-jets on a home-made boom. This can easily be made with 1/2" galvanized pipe and Tee's. Our tractor is equipped with a Tachometer. This of course is not necessary to determine speed rate. A measured distance and a watch with a second hand can be fairly accurate. Our pump is a P.T.O. piston pump which delivers 12 G.P.M. Each Tee-Jet delivers .52 G.P.M. at 30 lbs. pressure. Information on Tee-Jets can be obtained from Spraying Systems Co., 3201 Randolph St., Bellwood, Ill.

Our experience is almost entirely with Simazine 80W wettable powder. We feel that we can get a more even coverage with a sprayer. Another important factor is cost. The cost to treat an acre with Simazine as a spray is \$7.56, compared to \$21.18 if used in a granular form.

There are of course many plant varieties that Simazine can safely be used on, but we have limited it's use to Taxus, Junipers, Pines, Arborvitae and Cotoneaster. Last year we tried *Pieris japonica* with success. I realize that many nurserymen are using it on non-recommended plant species, and with excellent results.

In closing I would like to repeat that care in the weighing and measuring of material and the calibration of equipment is extremely important.

MODERATOR SHUGERT: I will now entertain questions.

CASE HOOGENDOORN: Hooray! Are those grafts callused by the time you line them out?

MR. DONALD WEDGE: No, they don't show callus when we put them in cold storage without callusing. But prior to cold storage we place them in a warm room for a period of time and the upper scion shows callus. They are grafted in January - February and planted in the early part of May.

MR. HOOGENDOORN: You put them in poly bags right away, then you put them in cold storage.

MR. WEDGE: Right.

MR. HOOGENDOORN: Now, that's why I ask you. By the time you plant them, is there any callus on those grafts?

MR. WEDGE: No outward appearance of callus.

MARTIN VAN HOF: Are those grafts waxed or are they not?

MR. WEDGE: They are not waxed.

MR. VAN HOF: You have no problem of drying out by the time you plant them?

MR. WEDGE: That's the reason for the poly bags.

MR. VAN HOF: Yes, I know, but suppose you have a dry spell after planting?

MR. WEDGE: They are planted so only an inch or less is above the ground.

MR. ED AMBO: I would like to ask the young Van Hof to explain a little more about Simazine. You hear so much controversy about the use of this material. How long have you been using it?

KLAAS VAN HOF: About five years. I think the reason some people run into trouble using it, is because they don't take care to calibrate their machinery, they don't take care to weigh the material, they just do it haphazardly. They just give it to an employee to throw some Simazine in a tank and off they go. To me, this is very dangerous.

MR. AMBO: You said something about constant cultivation. You can't cultivate if you put Simazine on!

KLAAS VAN HOF: No. Absolutely. I would add too, that I am a firm believer in a dust mulch and consequently I like to see loose soil. I feel if we did not cultivate we probably would have control for a longer period. It's true we don't have control for 12 months. Around the first of August, we get some weeds and have to do a lot of cultivating and hand weeding after the first of August until frost. But still the Simazine takes the burden of weeds off as in the spring, which to me is very important.

MR. AMBO: You said you used half strength? Is that what you use?

KLAAS VAN HOF: No, we don't use half strength. We could use about $3\frac{3}{4}$ pounds per acre, but we cut it down to 3 pounds.

MR. AMBO: You have noticed no ill effects?

KLAAS VAN HOF: Absolutely none. Every year we have check plots to compare the growth on plant varieties and there has been absolutely no difference.

MR. AMBO: What do you do from August on, when the weeds start coming back?

KLAAS VAN HOF: Then we employ hand methods, hoes and that sort of thing.

MR. VINCE BAILEY: Have you found any plants which are injured at this rate of application?

KLAAS VAN HOF: We have done very little in testing a large variety plants for injury, but what ever we use it on, we find no injury, what so ever. Last year some *Ilex hetzi* was accidently sprayed. There was some discoloration of the foliage but no reduction in growth.

MR. VINCE BAILEY: I might say that our experience is very similar to yours, although we have had some injury on mugo

pine. We treat about 100 acres a year. We use two pounds per acre active ingredient, banded.

GERALD VERKADE: Klaas, do you run into a problem with crab grass?

KLAAS VAN HOF: Yes, we do. We can really get a build up of crab grass in August. I understand that heavier dosages of Simazine control this, but I'm still afraid of it, and we just struggle along with the crab grass. I also understand with some of the other chemicals you can control crab grass.

VOICE: Do you have any problem getting the Simazine into solution?

KLAAS VAN HOF: No, we don't. We mix the Simazine first in a five gallon bucket, with some water and use an electric drill paint mixer on it and we get a good emulsion. Then we put it into the tank and stir it by hand after it goes in and again every 15 minutes to make sure it is in suspension. We haven't had any trouble.

TOM PINNEY: It helps also to use warm water. We mix it up to a paste and it works very well.

HARRY HOOPERTON: Do you get foaming in the tank? We get a little foaming.

KLAAS VAN HOF: No, we have no trouble.

HARRY HOOPERTON: I might say we tried several strengths — single, double, and triple on a few items, especially privet. We had the prettiest golden privet you ever saw. Two years later, it was back to normal green. We dug them and checked the roots and found no ill effects. You get the same thing on forsythia, Euonymus, and quite a few other things. We could not find any ill effects on the roots but we did have a little bit of growth retardation in the first year. But after that we could find none.

MODERATOR SHUGERT: I would like to direct a question to Mr. Wedge. Do you find any of the varieties of lilac which have difficulty going on their own root?

DONALD WEDGE: Yes, some of the white varieties for example — Mount Blanch is the first one the ash seems to be persistent on, but that is the only one.

CASE HOOGENDOORN: After you have these planted and hilled up, do you keep your hill around there constantly in order to make these "eyes" go over on their own root? You don't hoe between the plants?

DONALD WEDGE: Yes, we hoe between the plants.

CASE HOOGENDOORN: You knock down the hill? You don't hill them after you plant them?

DONALD WEDGE: We cultivate up. Then we hoe it away. We cultivate them up. Hoe them away. That's the way we get rid of the weeds.

CASE HOOGENDOORN: And still they go on their own roots?

DONALD WEDGE: Yes.

CASE HOOGENDOORN: Wonderful! I wish we could do it.

PETER VERMEULEN: Klaas, do you feel an application of

Dacthal in August, when your Simazine starts wearing off, ought to be practical?

KLAAS VAN HOF: I might possibly be, Pete, but we've had no experience with it and I couldn't comment on it.

JOERG LEISS: Why do you spray over all, if you cultivate in the rows?

KLAAS VAN HOF: Well, I know several nurseries are using band spraying, Mr. Bailey said he used this method, but I can't give you a good reason except to say an overall spray is what we have used and just haven't bothered to change it. I realize that we probably spray about 20 acres, possibly a little more, so the cost is not too different.

MODERATOR SHUGERT: Would Mr. Dugan like to comment on weed control in Ohio?

DAVE DUGAN: I will not have time to hit them all. I don't know why you are using Simazine. That went out three years ago. There are four or five I think you should be trying. We do use Simazine at four pounds. Dacthal is an excellent material, working in Ohio, of course it is made in Ohio. Have you got casoron yet or dymid? Casoron is the one you put on, cultivate it in, plant in it and then go fishing, and this is looking terrific in Ohio. Dymid will take all this grass stuff out and do everything else Simazine will do and Chloro I.P.C. is still good, applied in fall or spring when cool and moist. The whole thing is to add about 10 feet to your herbicide shelf each year. You have to work along with your material, your weeds and your soil type. We were whispering in the back there and we were up to a thousand pounds of Simazine on some rhododendron in complete peat. But don't try that on sand.

MODERATOR SHUGERT: We are now in the last quarter of the afternoon, and our first speaker — who I am pleased and proud to have with us — talking on over wintering and early shipping, is Mr. Leslie Hancock from Woodland Nurseries, Cooksville, Ontario, Canada.

OVERWINTERING AND EARLY SHIPPING

LESLIE HANCOCK
Woodland Nurseries
Cooksville, Ontario

The subject on which I have been listed to speak is somewhat misleading as I am by no means an authority on either over-wintering or early shipping. Nevertheless, I am keenly interested in both, first as a plantsman to bring material readied for sale through the winter in good health, and secondly to get on with the job of distribution well ahead of the time we should be replanting the nursery.

There are many nurserymen who will consider that this problem has been solved, for we already have huge storages where millions of plants are stacked in shingle tow and shipped