

develop a good enough quality root system on such plants as Pfitzer juniper in seven months (69%) as to allow us to plant the cuttings directly in the field under irrigation with a great saving in labor.

Another factor is that we nurserymen all want to restick, we don't want to throw a cutting away. Well, you never have to bother to restick after using the higher concentrations. It is either rooted or dead. This makes our decision quite simple. Thank you.

* * * * *

MODERATOR LANCASTER: Our next speaker is John Roller, Verhalen Nursery Company, Scottsville, Texas, which incidentally is in the second largest state.

MR. JOHN ROLLER: It is the largest state in the Union without polar bears.

Mr. John Roller presented his discussion on the use and effects of the quick-dip method for treating cuttings. (Applause)

PREPARATION AND USE OF QUICK DIP SOLUTIONS ON CUTTINGS

JOHN B. ROLLER
Verhalen Nursery Company
Scottsville, Texas

We have been using this quick dip method for five years now, and the way we mix our solution is quite similar to that described by Mr. Gray and Mr. Pinney. The only difference is that we use two grams of indolebutyric acid and two grams of naphthaleneacetic acid in order to get a little wider range for plants which might benefit. Now this is mixed in 200 c.c. of isopropyl alcohol, or the common old rubbing alcohol which costs about nineteen cents a pint. We went through the red tape to obtain ethanol and we finally came to the conclusion that we could see no difference whatever in the results between isopropyl and ethyl alcohol.

Although we have been using this quick dip method for a relatively long time I have had the same results as Harvey Gray has had, that is, inconsistent rooting.

For one of the concentrations that we use, I take 10 c.c. of the stock solution and mix this with 90 c.c. of tap water. We use five, ten, and twenty per cent solutions.

Our cuttings are made, dipped and stuck. I have had 100 per cent rooting on some types of cuttings which for me were usually difficult to root. For example, we have a dwarf blue Pfitzer which would take sometimes 18 months to root, and then with a very low percentage. By actual count we were able to root 100 per cent in small batches.

I am not going in too much detail about mixing these solutions since it is quite similar to what you have already heard. I have found

that with cuttings that have been handled every year over this five year period I could expect anywhere from 29 per cent to 100 per cent rooting. I do not know why this occurs. Consequently, I do not recommend the use of the quick dip except as a trial on something that is really giving you trouble. It has been of benefit to us on certain species of cuttings at certain times of the year, and it has speeded up the rooting of Pfitzer juniper cuttings. One year juniper, for instance, gave us 72 per cent rooting and were ready to pot in six weeks. It never happened again. Thank you.

* * * * *

MODERATOR LANCASTER: Thank you, John.

Our next and final panel speaker is Mr. E. Stroombeek, from the Warner Nursery Company, Willoughby, Ohio.

Mr. Stroombeek presenter his prepared paper, "Hormone Application by the Quick-dip Method." (Applause)

HORMONE APPLICATION BY THE QUICK DIP METHOD

E. STROOMBEEK

*Warner Nursery Company
Willoughby, Ohio*

We at the Warner Nursery decided to give the so-called "quick dip" method a try in the summer of 1953. We had been using the Hormodin powders No 2 and 3 exclusively and had found their range to be quite limited. We were looking for a stronger concentration of growth substance, as for example, especially 2 per cent indolebutyric acid. Since this was not commercially available we bought a small quantity of pure crystals in order to prepare our own solution.

When this substance was obtained we made some tests, diluting crystals in alcohol in approximately the same percentage range as the Hormodin powders, namely 1/2, 1 and 2 per cent. It turned out that dipping in these straight alcohol solutions was not satisfactory and resulted in considerable burning. Adding small quantities of water to these solutions gave more encouraging results but we soon found out that adding too much water to the 1 per cent and 2 per cent alcohol solutions resulted in the recrystallization of the indolebutyric acid. This rendered the solution useless. At the same time we also found that indolebutyric acid diluted in alcohol in the lower percentage range was more effective than the higher percentages available in powder form. For instance 1/4 per cent indolebutyric acid in solution in alcohol plus water, was more effective than Hormodin No. 3,

From this point on we concentrated on these lower percentage solutions and had increasingly good results using them on evergreen as well as various softwood cuttings. We gradually used less powder formulations, and in 1955, after giving the controversial chloromone a