THE USE OF CHLOROMONE ON WINTER AND SUMMER CUTTINGS

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Korean boxwood is a favorite of ours and we have been growing it for over thirty years. I have heard comments that it is difficult to grow, but we have had quite good success growing it over the years.

Korean boxwood from seed is exceedingly variable. Some plants have large leaves; others small leaves. Some plants are green in color; others are colored. Cuttings from some plants root considerably earlier than others. Plants which turn red in winter are much harder to root. These are reasons why it takes two years to get maximum rooting.

The time for making boxwood cuttings it just as important as for other cuttings. After many years of experience, we have found that the best time for taking cuttings is early August. The cuttings have to be firm before they will root. If they are too soft, they will shrivel under the glass. It has been our experience that about seventy per cent of the cuttings will root after one year in the greenhouse. That is not a profitable operation.

Last year we ran a few trials with Korean boxwood and *Taxus,* using Chloromone. With boxwood we used several dilutions of Chloromone as well as the 100% material. The biggest surprise I have ever had with boxwood was the cuttings treated with 100% Chloromone. We found that after 30 days in the bench some of the cuttings were rooted as well as untreated cuttings which had been in the bench for a year. By using Chloromone we also found that we could make the cuttings twice the size. This is very profitable to the nurseryman.

We also ran a few tests on *Taxus* that we usually have trouble rooting. The strength of Chloromone used was 100%. *Taxus media browni* did not root as well with Chloromone treatment as with the usual procedure. *Taxus media hicksi* was included by mistake. We usually get near 100% with Hormodin No. 2 treatment. We also obtained 100% with the Chloromone treatment. *Taxus cuspidata wardi* was not as satisfactory as the other forms. We rooted only 85 of 105 cuttings. We have a yellowleaved form of *Taxus cuspidata,* but we were only able to root only one of the 140 cuttings tested. Why the yellow form did not root, I do not know.

During the winter we also tried 100% Chloromone on *Juniperus tameriscifolia.* The cuttings burned heavily and I think we rooted only about 10 per cent.

Since we had burning on the Juniper cuttings treated with 100% Chloromone during the winter, we tried 33% Chloromone on juniper cuttings during the summer of 1955. Of the twelve varieties tried, we had excellent rooting on about five. They were treated and stuck in cold frames. The frames were covered with glass but were not under our lathe.

Juniperus chinensis stricta was one of the varieties which rooted strongly after only 60 days. The same juniper, stuck the same day but treated with Hormodin No. 2, did not show any sign of rooting in the 60 day period.

Juniperus chinensis obelisk and *J. squamata meyeri* both had about the same response as the stricta juniper. *J. communis hibernica* and *J. c. cracovia* also responded well following treatment with 33% Chloromone.

Of the three varieties of *Thuja occidentalis* tested, *T. o. pyramidalis* was by far the best.

Examples of many of these cuttings can be seen in the exhibit.

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MODERATOR MEAHL: I am certain that many of our members have been interested in your results obtained with Chloromone. Thank you, Mr. De Groot.

MR. HOOGENDOORN: How was the Chloromone cut?

MR. DE GROOT: With water.

MR. HUGH STEAVENSON (Forrest Keeling Nursery, Elsberry, Mo.): Did you try Pfitzer's juniper with Chloromone?

MR. DE GROOT: Yes, I did, I did not take the cuttings out because they didn't respond as well as the other varieties. They are still in the propagation bed.

MR. GERALD H. VERKADE (Verkade's Nursery, New London, Conn.): What medium do you use to root these cuttings?

MR. DE GROOT: We use a mixture of sand and peat.

MR. VERKADE: What temperatures did you run the greenhouse during the winter?

MR. DE GROOT: The average temperature is about 55°F. I would like to bring it to nearer 65 next year.

MR. CHARLES E. HESS: I think that the reason Mr. De Groot has had very good success with Chloromone and many nurserymen have had trouble with it burning the cuttings, lies in the cooler condtions inside the greenhouse. Plants, such as holly, react tremendously to this material at higher temperatures. If it is used on holly at lower temperatures there isn't this severe reaction.

MR. STEAVENSON: What is Chloromone?

MR. DE GROOT: I don't know.

MR. CHARLES E. HESS: We have been told that it is an extract from the young tips of alfalfa. We have tried to extract it ourselves but have not obtained a solution comparable to the commercial preparation. With Dr. Nitsch's help, we are now trying to determine its contents by bioassay methods.

MR. INGELS (Home Nursery, Lafayette, Ill): Will freezing damage the material?

MR. CHARLES E. HESS: We have accidentally frozen it and have also tried to inactivate it by oxidation. Neither treatment was effective in reducing the strength of the material to any extent. It seems to be a water base, but we are not certain.

DR. L. L. BAUMGARTNER (Baumlandia Hort. Res. Lab., Croton Falls, N.Y.): There is some question as to just what it is. If it is only an extract of chlorophyll, it would deteriorate very rapidly. It seems to be a copper salt form. This is probably what protects it in storage. Reports which I have heard are quite variable as to the value of the material. We have had some good results which, unfortunately, we have not been able to repeat. I am curious if anyone has been able to repeat with the same variety of plants.

MR. CHARLES HESS SR.: We have with holly. Results are consistently good.

MR. WELLS: I have repeated it twice and the results were nil both times.

MODERATOR MEAHL: We will have to terminate the first session of the Speaker-Exhibitor Symposium. I am certain you all have enjoyed hearing this report of Mr. De Groot's. I will turn the session back to the President.

PRESIDENT FILLMORE: Thank you very much, Professor Meahl, for conducting this excellent session this afternoon.

Before we adjourn, I have a brief statement to make to our guests. The Plant Propagators Society does not solicit members in the usual sense of the word. But we do welcome all persons who are sincerely interested in plant propagation and who are willing to share their knowledge and exchange ideas with others. You have seen an example of exchange of ideas this afternoon and you will see many more instances of this during our meetings. We hope that both the members and guests enjoy these meetings. If any of the guests are interested in membership in the Society, you should contact the Secretary, who has application forms, and talk with the members of the Membership Committee, who are Mr. William Flemer, Mr. Fred Galle, Mr. Roy Nordine, and Mr. Hugh Steavenson.

The Exhibitor-Speaker Symposium will be adjourned until 8:00 this evening.

The session recessed at 5:00 o'clock.

The Speaker-Exhibitor Symposium recessed from 5:00 p.m. to 8:30 p.m.

MODERATOR MEAHL: We will continue this part of the Fifth Annual Meeting with a paper sent by F. L. (Steve) O'Rourke, USDA, Point Four Program. Steve was one of the original members of the Plant Propagators Society, but because of his work for the USDA in foreign countries it has not been possible for him to attend recent meetings in this Society. Mr. O'Rourke will not be present today, but his paper is of such interest that the Program Committee have requested that it be read.

Mr. F. L. O'Rourke's paper, entitled "The Bolivar Pit Method of Rooting Softwood Cuttings" was read by the moderator, Professor Meahl.