and 60 cents. In order to give you some idea how we use the work solutions, I will mention some of the plant material which is treated with each concentration. (Table 2).

I have never believed in over-emphasizing the importance of hormone application since it is just one of the many factors that has to be taken into account when making cuttings. However, provided all those other factors are taken care of, proper hormone application usually makes the difference between a lightly rooted cutting and one with a heavy and well branched root system. While using these hormones, we at Warner Nursery have found through the last four years that the quick dip method consistently gives better and quicker results than the powder forms. Thank you.

MODERATOR LANCASTER: If agreeable with the members of the Society, and the panel, I am going to ask that if anyone has any questions please write them out and bring them to the Question Box, Friday night.

Leaving the panel discussion of the quick-dip method of hormone application, we will go on to the "Budding of Dogwood in the Field" by Hoskins A. Shadow, Tennessee Valley Nursery, Winchester, Tennessee. Mr. Shadow.

Mr. Hoskins Shadow presented his prepared paper on "The Budding of Dogwood in the Field." (Applause)

THE BUDDING OF DOGWOOD IN THE FIELD

HOSKINS A SHADOW
Tennessee Valley Nursery
Winchester, Tennessee

It is my desire to give you as near as possible the procedure we follow in the field propagation of dogwood on a commercial basis.

Our source of seed is from the native dogwood, which is abundant in our area. These berries are gathered in the early fall and are brought to our packing shed where we buy them, from collectors, by the pound.

We prefer that the berries be well ripened and find that the best test is to press the berries between the thumb and fore finger If the seed presses out freely, the berries are ripe and are ready to be cleaned. We use a Dybvig Seed Cleaner for this process and find it very satisfactory.

After the seeds are cleaned, they are placed in the open air and sun to dry for a few hours and are then stored in bags in lots of 25 lbs., which is a convenient quantity to handle, since it will not mold, if hung from a rafter.

When weather permits in late October and early November, we plant in a fertile, well prepared seed bed directly in the field. Our standard row is 42 inches, and the seed are placed in a "V-shaped furrow about one to one and a half inches deep. This furrow is then filled with well decayed hardwood sawdust and firmed with a roller or Cultipacker. We find this desirable, as it prevents, to some degree, the loss of sawdust by wind erosion.

Germination usually takes place between April 1st and 15th. If we have not been able or have not desired to plant all of our dogwood seed in fall and early winter, we will stratify them by January 15th.

Our method of stratification uses equal parts by volume of sand and well decayed sawdust. The seeds are poured on this mixture and hand mixed on a concrete floor The mixture is then placed in steel barrels and stored at a temperature of 40 degrees F. for 60 to 75 days. I might add that our mean average temperature, at that season of the year, is about 40 degrees; consequently we have had good results by storing these barrels outside on the north side of a building.

At planting time the seeds are taken out of this stratification mixture by running it over a ¼ inch screen which separates the seed from sand and sawdust. These are then planted as previously described Under favorable conditions, these seed will usually germinate within two or three weeks.

The little seedlings are very weak when they first emerge and very good care must be taken of them in these early stages of growth. Irrigation is desirable. After the seedlings are well established and the stand can be determined, they are ready to be thinned to a normal stand, which, for us, is about three inches apart in the row. This thinning is usually done from the 1st to the middle of July, or after the seedlings have a fairly well established root system. Our budding operation usually begins between the 1st and 15th of August, or as near to that time as is practical.

You will remember that we have a very tender seedling and consequently we must also have budwood which is in a similar condition. In other words, we have a small, tender seedling; we want a small, tender bud. It takes a great of skill and dexterity to handle these tender buds and seedlings.

I might mention here. that we formally budded our dogwoods on transplanted seedlings After using both methods, we much prefer the budding of one year old seedlings in the field, and root pruning them, to the method of budding transplanted seedlings. The former makes a much stronger union and eliminates the need for staking.

We use the shield or T-bud methods placing the bud on the seedling as low as is practical and on the southwest side of seedling Although this is the direction of prevailing wind in our area it makes a straighter plant.

In removing the bud from the bud stick, there is a small piece of wood that remains in the bud. We make no attempt to remove this, as more damage is done to the bud by trying to remove it than it causes. The bud is then tied firmly in place with raffia. This is done by wrapping three rounds of raffia around the seedling just below the eye or bud, and four rounds just above the eye. The raffia is twisted into a rope above the wrap, and tied on the wood of seedling instead of on the raffia itself This tie will hold the bud firmly. The bud will usually stick immediately. The seedlings should be watched carefully and within 10 days to 2 weeks, the tie should be cut on back side before it girdles the seedling.

About November 15, or as soon as the plants are dormant, these seedlings, with the live bud in them are root pruned to induce the development of a fibrous root system. The following spring, just before the bud starts growth (about April 1st), the tops of the seedlings are removed by cutting them off just above the bud. All suckers must be removed and the bud given an opportunity to grow. By the end of the first growing season, we will have plants from 12 to 36 inches in height.

When well ripened and dormant, we run the digger, with a root pruning blade flat, in order to prevent tilting, under these one year plants. This permits us to remove all the plants we desire to move, leaving well spaced plants two feet or more apart in the row for growing on the second year We are able to produce 3-4 and 4-5 foot plants the second year, usually with bloom buds to be dug B&B. To increase a desirable quantity of bloom buds, we find that irrigation is very helpful.

This method produces a well formed, straight trunk, with perfect compatibility between scion and stock which increases the chances for survival for each plant Thank you.

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(*Editor's note*: Mr. Shadow supplemented his discussion with a series of well selected, colored slides. Some of the comments and questions follow).

MR. CASE HOOGENDOORN (Newport R I): What is the reason for covering your seed with sawdust instead of soil?

MR. SHADOW: Well I guess you learn a little bit by experience. We find we get good stands by using sawdust and we don't by using soil.

Our budding crew consists of three budders, three tiers, one man preparing the seedlings for budding.

MODERATOR LANCASTER: Thank you very much, Mr. Shadow, for a very interesting discussion on the propagation of the dogwood.

Since Mr. Shadow did not use his allotted time of 30 minutes we have time for several questions Mr. Flemer.

MR. WILLIAM FLEMER (Princeton, New Jersey): I would like to ask if you have tried plastic budding strips on your dogwoods?

MR. SHADOW: No, Bill, I have not. I would be rather reluctant to try them in any quantity since the bud is very, very tender. If it were a larger bud or of the type that you were putting in a transplanted seedling, then I think probably they would be satisfactory. I question the advisability of using them on a tender bud.

MODERATOR LANCASTER: Thank you

Our President Roy Nordine has several announcements. We thank all of you for participating in this session this morning. We hope everyone has obtained some valuable information. (Applause)

PRESIDENT NORDINE: There are a number of committees to be appointed We will at this time name only those that will function during the course of this meeting.

The Nominating Committee shall consist of Roger Swingle, Chairman, Frank Turner, and Roger Coggeshall.

The Auditing Committee shall consist of Tom Dodd, Chairman, and Hans Hess.

The Resolution Committee shall consit of Leslie Hancock, Chairman, and Alfred Fordham.

Other committees will be appointed at a later date.

The meeting this afternoon will start on time, since we have now set a precedent for this Society by starting on time this morning. Thank you.

The session recessed at twelve o'clock