

courses and she has worked up through the channels too. She went to work with Bill and actually I'm not sure who is the boss there now. Anyway, Linda:

HORMONE POWDER MODIFICATION

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The topic, "Hormone Powder Modification" includes the very effective "H.P.M. Formula" which is the basic point for the information that is to be presented. At Wil-Chris Acres we have been using the following formula for rooting cuttings:

Hormodin No. 3	— 10 ounces
Benlate	— 1 ounce
Indolebutyric acid	— 5 grams (2 heaping tsp.)

These component parts are put together and shaken for 20 minutes to insure thorough mixing. For absolute mixing that has been used effectively place the ingredients in a container that can be put on a paint shaker. Expansion is involved in this blending, however, so be prepared with extra space in the container for fluffing. It is understood that Hormodin No. 3 does have a high IBA level already but our "H.P.M. Formula" gives yet another boost of indolebutyric acid.

Below is a summary of our research results:

I. Deciduous plants, such as *Euonymus alatus* 'Compacta'

- A. In 1970, out of a flat of 150 cuttings, 75 rooted giving 50% rooting.
- B. In 1971, H.P.M. was used; out of a flat of 150, 135 rooted, giving 90% rooting.
- C. We have tried cuttings also from such plants as quince and the deciduous magnolias, *M. stellata*, *M. x soulangeana*, *M. liliflora* 'Nigra', *M. s.* 'Rubra', and *M. s.* 'Rustica Rubra'.

II. Rhododendrons.

- A. Rhododendrons treated with H.P.M. showed a better root system.
- B. We root the hardier rhododendrons — many varieties from A to Z, 'America' to 'Nova Zembla'.

1. Some varieties we are propagating are:

'America'	'Kluis Sensation'
'Anna Rose Whitney'	'Lampighter'
'Mrs. Betty Robinson'	'Mrs. Tom H. Lowinsky'
'Blue Peter'	'The Hon. Jean Marie Montague'
'Chionoides'	'Scarlet Wonder'
'Cosmopolitan'	'Scintillation'
'Dora Amateis'	'Unique'
'Gomer Waterer'	'Virginia Richards'
'Jingle Bells'	'Vulcan'

2. Other varieties include:

'Bowbells' — which is difficult to root in some years but the problem was taken care of with H.P.M. very well.

'Mrs. C. B. Van Ness' — There was a problem in rooting this one, but then again, this variety is always difficult.

'Nova Zembla' — this would be classified as extra good as it roots well and heavily.

'Virgo' — in reference to this variety, the newer white one from Canada gave problems in rooting.

3. The time must be right when you take rhododendron cuttings. This means that the wood should not be hard. 'Blue Diamond' rooted 98% with H.P.M. as opposed to 75% rooting in a flat of cuttings taken later, but given the same treatment with H.P.M.

III. Camellias.

Camellia cuttings always root very well for us, but we were very objective. When it came time to pot the cuttings we were very analytical and did detect what appeared to be a stronger root system with H.P.M. treatment.

IV. Pieris.

A. In the different types of Pieris there appeared a better root system with H.P.M. treatment. It seemed to separate the weak from the strong. Perhaps it may be more accurate to say that the strong were stronger and the weak — died! Even in the light of this, there were only two flats of re-strikes, where before we had as high as 15.

B. 'Valley Rose' cuttings showed 85% rooting for us the first year we worked with them. These were new from the North Willamette Valley Experiment Station, Aurora, Oregon. We also stuck 3,000 'Flamingo', with 2,400 rooting, giving us a rooting percentage of 80.

V. Broad-leaved evergreens.

A. I wish to give *Magnolia grandiflora* cuttings an "Oscar"; they merit this award because they responded beautifully to H.P.M. They were the best ever.

B. Dwarf laurestinus, *Leucothoe*, and *Andromeda polifolia* never have presented problems in rooting, but a better, more extensive root system was produced with the H.P.M. rooting mixture. (By the way, even conifer cuttings react favorably to H.P.M.)

VI. Huckleberry (*Vaccinium ovatum*).

A. In former years there was 75% rooting as opposed to 95% with the use of H.P.M. We wish to note, however, that we must be cognizant of the fact the seasons are different each year and that rooting percentages will show a wide variance due to this.

VII. *Pyracantha* 'Watereri' and *Pyracantha* 'Red Elf'

Last year was the first time we used H.P.M. formula on these plants and due to the late sticking they responded in a negative manner; in fact, they died.

VIII. *Ilex crenata* 'Convexa'.

These rooted as readily as always, just as do *Viburnum*.

IX. *Viburnum*.

Among the viburnums we rooted are *V. burkwoodi*, *cin-namomifolium*, and the extra responsive *dauidii*.

X. *Cotoneaster dammeri* 'Lofast'

and the other types of cuttings that root easily, were literally killed by the use of the extra IBA in the H.P.M. mixture.

All in all, the "H.P.M. Formula" is excellent in the areas prescribed and does effectively and efficiently root cuttings of certain plants which, in turn, expedites the needed growth resulting from the early rooting. However, it does have its negative areas and drawbacks. Temperature and water are always paramount items. We recommend 75° F bench temperature and 10 degrees less air temperature, although we realize that it is not always possible to obtain this.

BRUCE BRIGGS: Thank you, Linda. Well, we've had hormone powders, then liquids, and now we're going to see what happens. What about herbicides? Do they help rooting or do they hinder rooting and as we go along we should look at all our chemicals; and I'm not sure where we're going. We've got so many we're using now. Maybe this is the confusion. But, anyway, to talk on this, we have with us Dr. Bob Ticknor. If you remember yesterday, we went on a tour to his Experiment Station. Bob is in charge of the Horticulture Division at the North Willamette Valley Experiment Station, Aurora, Oregon. He is with the Oregon State University, Horticulture Department. Without further ado — Bob Ticknor to talk on herbicide effects on rooting. Bob: