

Comparison of IBA to KIBA

Edward L. Carpenter

Midwest GroundCovers, Post Office Box 748, St Charles Illinois 60174

The rooting hormone KIBA (potassium salt of indolebutyric acid) deserves experimentation as a potential commercial rooting hormone. I will present a comparison of KIBA to IBA based upon observations and experimentation at Midwest GroundCovers.

To help understand the conclusions we have drawn, I will provide a brief explanation of our propagation systems at Midwest GroundCovers. Throughout a season lasting from March through October, we will propagate approximately 12 million cuttings. These cuttings range from groundcovers such as *Euonymus fortunei* 'Colorata' and *Pachysandra terminalis* cultivars to conifers such as *Juniperus chinensis* var. *sargentii* 'Viridis'. All cuttings are field prepared by cutting crews and then stored in a cooler. Once the sticking site is prepared, the sticking crews take the cuttings from the cooler, dip them in hormone, and stick them at the site. We use 8 cutters and 7 stickers—so speed is essential for these 12 million cuttings.

Certain criteria must be met before deciding on the use of a particular rooting hormone. Firstly, due to the large quantity of cuttings, the rooting hormone must be quick to apply. This rules out powders because of the added steps required to apply the powder.

The second criteria is ease of mixing and use. We mix all of our hormones from the raw elements, therefore we need a hormone that will readily enter solution. After mixing, the sticking crew can easily understand proper application.

Cost effectiveness is the third criteria. A large quantity of cuttings requires a large amount of hormone. Many of the premixed hormones are too expensive to purchase in the amounts that are required.

Lastly, will the hormone help us get the rooting percentages that are needed? This is the most important criteria because if the hormone does not work well, none of the other criteria are relevant.

These criteria must be considered when selecting or changing rooting hormones. Not meeting any one of these could eliminate it for our use.

KIBA differs from IBA in that KIBA has a potassium molecule that IBA does not have. This one difference gives KIBA an advantage that I like. Being a potassium salt, it will dissolve readily in water which makes mixing faster and easier. Alcohol or other organic dissolving agents, are not needed to get the KIBA into solution. By not using an organic dissolving agent, such as alcohol, potential mixing errors that can lead to burning or loss of the cutting are avoided.

Several drawbacks exist from not using alcohol. Alcohol is a sterilant, therefore more attention needs to be given to clean cuttings and a clean work area to prevent contamination. Also, a higher concentration of KIBA may be needed because alcohol serve as a carrying agent.

The concentration needed for desired rooting appears to vary between KIBA and IBA. For some plants, such as *Spiraea*, *Potentilla*, *Cotoneaster*, and *Thuja*, the concentration of KIBA needed is less than that of IBA. For other plants, such as

Juniperus chinensis var *procumbens*, *Rhus aromatica* 'Gro-Low', and *Berberis* varieties, the concentration for satisfactory rooting increased. The concentration did not change for plants, such as the varieties of *Juniperus horizontalis*, *Syringa*, and *Euonymus*. I am unable to explain these differences at this time as no pattern has developed. I would recommend beginning at your present IBA concentration and making the necessary adjustments as you experiment.

The useable storage life for IBA and KIBA solutions seems to be the same. However, I try to mix only enough solution needed for the crops being stuck at that time. Two to three months is the longest that I store a hormone solution.

During the experiments with KIBA, I did not experience any shoot inhibiting effects that can occur with IBA. Cuttings of all plants developed good shoot formation and growth after root initiation. Excessive callus growth without root development has not been a problem with KIBA. There have been no noticeable side effects to the plant material from using KIBA.

I have used KIBA on a variety of groundcovers, deciduous shrubs, junipers, vines, broadleaves, and perennials. Success was achieved with all species used in the experiments. With some crops, such as juniper cultivars and *Thuja* cultivars, rooting percentages actually increased. Success in rooting upright junipers was achieved with KIBA. Cultivars such as *J. chinensis* 'Mountbatten' and *J. virginiana* 'Cupressifolia' have done quite well (approximately 85%). Deciduous shrubs including *Cotoneaster*, *Rhus*, *Viburnum*, and *Chaenomeles* all responded well with no loss of rooting percentage. Broadleaves like *Buxus*, *Ilex*, and *Euonymus* improved slightly over IBA. With vines and perennials, there was no real difference between using IBA and KIBA. I have not experimented with any cuttings of ornamental trees or the large upright shrubs.

The availability of KIBA for nursery use is still experimental and is not available for general nursery use.

I have been very satisfied with the performance of KIBA on all crops tested. With its ease of mixing, increase in rooting percentages, and lack of side effects, KIBA should be tested on other plants. I would recommend you experiment with KIBA if given the opportunity.

VOICE: Where do you buy the KIBA and do you dilute it?

ED CARPENTER: From ICN Laboratories and we dilute with water.