THE BEST PROPAGATION FLAT IS NOT FLAT

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Decker Nursery is a company specializing in propagation. We root cuttings from both dormant hardwoods and summer softwoods. The majority of our propagation is in the Kadon plastic flat. A major concern in cutting propagation is insuring sufficient drainage to reduce decay. This problem is particularly acute in the summer as we use an automatic mist system to prevent desiccation. Often we have many different species/cultivars of cuttings in the same area, all of which receive the same amount of mist. This inevitably results in excessive water on plants with low mist requirements. Often we experienced either decayed or wilted cuttings as it was always a running battle of sufficient mist versus wet flats.

At this point I would like to explain a physical property of all liquids called surface tension. This is a property of liquids that tends to draw the surface molecules together, thereby forming droplets. Also surface tension holds droplets together to somewhat resist the forces of gravity. An example of this is the "mound" of water that rises over the top of a completely full glass of water. Without surface tension the water surface would be flat.

We noticed that when propagation flats were lifted and removed from the mist bench, they were usually carried at a slight angle. This resulted in water dripping out of the flats at the lower end, usually down the front of the person carrying the flat. We came to the conclusion that if the flats are slightly tilted in the mist bench, excess water concentrates on the downhill edge. The concentration of water and the effects of gravity become greater than the water's surface tension and excess water constantly drips out of the flat. A good example of this would be two identical sponges that are equally saturated. Place one on a flat screen and one on a slightly tilted screen. After a few moments the tilted sponge will have retained less water.

Three years ago we began to tilt all our summer propagation flats. This has almost completely eliminated losses of cuttings due to excess water, allowed us to use excessive mist on unusually hot days, and reduced the stress on the cuttings, resulting in a shorter time to produce roots.

We also tried this with our flats of winter hardwood cuttings but found it to be a negative factor. First, the cuttings are manually hand-misted instead of an automatic mist system. This results in little chance of excess water. Second, the tilt removed water so well that the uphill cuttings would dry out. We hope this hint might aid in your success with any cuttings sensitive to "wet feet"