## Observations From Rooting Chocolate Cosmos From Tissue Culture

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From 1998 to 2006, we experimented with small numbers of chocolate cosmos (*Cosmos atrosanguineus*). It is not a plant that really fits into our standard bedding plant program, so we have chosen to take it out of production this year. I wouldn't say we have mastered rooting this plant by any means, but I can share a few things that we have learned along the way.

**Soil Mix:** Electrical conductivity (EC) below 1.0, we usually leach down to 0.5 EC. We like our regular bedding potting mix for cosmos, as it has larger pumice in it, and good drainage. It worked better than our finer propagation mix.

**Mist:** Keep humidity high (80%–90%) if possible. But, keep mist as infrequent as possible after the first day. Use just enough water to keep things humid and moist. We rooted these in June/July and found white plastic best for shading.

**Fertilization:** Start with a light feed after 1 week, then feed weekly during rooting process.

Fungicide Drench: The usual preventative for disease.

**Hormone:** We have used Hormodine 1 and 2, Hormex 3, and Woods liquid on chocolate cosmos. Our best rooting has been at the 1 : 10 rate Woods (Woods is composed of 1.03% IBA, 0.66% NAA) and the 0.30% IBA rate of the powdered products.

**Cutting Quality:** This seems to play a huge role in our success rate. Straight cuttings with a good caliper perform the best. If the stem has a reddish hue to it, they seemed to be better. Thin, wispy, light-colored cuttings died. Also soft tips did not make it.

Sanitation: Always important, we cleaned and sanitized clippers/tools frequently, and washed hands.

**Results:** Our best rooting was probably around 60% to 70%. This leaves room for improvement. This plant is not only difficult to root, it can also be a challenge to overwinter and transplant. You can lose another 20% if conditions/timing are not right.

Even though there are some serious challenges to starting these plants (at least in our conditions) once it is up and growing, it is a beautiful product.

## **Protecting Fingers During Grafting: A Demonstration**

## Verl L. Holden

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With emergency room costs for a simple 5-stitch cut to a finger or thumb running \$800.00 or more, a simple tape protection to hands is good insurance. Holden Wholesale Growers is using two types of tape to provide both protection and dexter-