The mist house consists of heated benches and an overhead high pressure mist system. The rooting medium is best kept at 80–85 ºF. The mist system is set to a controller, which allows it to come on for about 14 sec every 4 min during the warm summer months.

The base of the grafted plant material is dipped into IBA rooting hormone powder at a strength of 0.3% and then stuck into the rooting medium. The base of the cutting will swell and callus will form. From the callus roots will emerge in a week or so and will continue to grow with time. The graft union will heal as the cambium from the scion and rootstock grow together. During summer this process can take 10–12 week.

The mist is turned off the bench for a few days following the proper propagation period and then the plants can be moved out of the propagation house. Success rates can vary depending upon the time of year from 100% success to less than 50%. It is not unusual to achieve 85% to 95% success rates with proper age of cutting material, bench temperatures, mist duration cycles, and following best management practices for cleanliness during all phases of the propagation cycle.

GENERAL SESSION IV: QUESTION AND ANSWER SESSION®

Dave Hannings: Was it necessary to have leaves on both the rootstock and scion to be successful?

Don Dillon: It helps to have foliage on both. In fact, sometimes late in the season some of the trifoliate (*Poncirus trifoliate*) rootstock varieties start to go dormant and percentages will tend to drop off so the leaves help the process.

Luen Miller: Is that *Amsinckia*, the giant-flowered one that you have?

Ginny Hunt: I think it is the giant-flowered one. There is another species called *A. grandiflora*, but this one has fairly large flowers.

Jack Kelly: Are you required to perform germination tests on your seed before you sell it?

Ginny Hunt: We don't routinely perform germination tests and I've not heard of any requirements to do germination tests. The feedback I've gotten from my customers is that the seeds come up very well.

Rich Persoff: Have you done any work with *Salvia funerea* from Death Valley?

Kathy Navarez: No, but if you have some seed I'd be happy to oblige you.

Lane McGlaughlin: Were you using GA_3 to get taller seedlings or to improve germination?

Kathy Navarez: I was trying to improve germination, but I was also trying to see what other factors might be important in the germination of *Salvia* seed.

Lane McGlaughlin: Was the elongation a surprise to you?

Kathy Navarez: No, elongation is very common.

Chris Cotting: What was the percentage of bleach you used and did you dip the whole cutting into the bleach?

Kathy Navarez: Yes, we dip the whole cutting into the bleach. I'm not sure of the bleach percentage, but it was just a few drops in a bath of water.

Chris Cotting: Do you start fertilizing cuttings immediately or do you wait until you start seeing root growth?

Kathy Navarez: I start fertilizing right away using our new fertilizer injection system and it really helps my percentage.

Mimulus aurantiacus: Taming the Sticky Monkeyflower for Everyday Gardens®

Richard Persoff
Azura, P.O. Box 2918, Alameda, California 94501

For 18 years, ongoing collections of *Mimulus aurantiacus* have been bred and backcrossed to overcome numerous horticultural challenges. Breeding goals and strategies have progressed from garden survival, water tolerance, and hardiness to developing compact and branching growth habit.

INTRODUCTION

Plants with a long history of cultivation fill the world's gardens. Explorers, enthusiasts, and nurserymen continue to offer selections from wild populations. Sadly, difficult care or propagation soon cause many beautiful introductions to be lost.

This paper describes the process of transforming the native California sticky monkeyflower (*Mimulus aurantiacus*) into a dependable subshrub for everyday gardeners. In the years since 1986, as each set of challenges has been overcome, others have appeared.

EARLY MIMULUS AVAILABILITY

Initially, I wanted only to have a few monkeyflowers in my own garden. Native plant specialists and native plant society sales at that time offered few *Mimulus* (or *Diplacus*, as they were then known) taxa. Those soon died when planted out.

In late spring *Mimulus* are common from Mexico to Oregon, from the sea to the mountains. Since wild *Mimulus* might be tougher than their potted-up cousins, I often collected a few stems. Dipped in rooting hormone and stuck into perlite, these rooted easily. But on potting up most soon died. Summer water killed!

Open-cross seed from survivors pollinated by hummingbirds readily sprouted in January. Most seedlings died before the sixth true-leaf stage. Perhaps 10% survived to flower and in the first years no more than 5% set seed, which was replanted that winter.

In the 1980s David Verity (1993) studied *M. aurantiacus* genetics and flower colors, growing several thousand liners in raised beds with sterilized soil. However, his large-flowered hybrids had the reputation of being difficult to keep alive.