

ADS Interviews Dr. Hanu Pappu on the Appearance of Virus in Dahlias

ADS: Dr. Pappu, your recent Bulletin articles and the presentations you made at our meetings around the country last year have certainly made us more aware of the progress you're making in understanding dahlia virus. What is the current focus of your research work?

HRP: I am pursuing several lines of research simultaneously. First, we are refining the virus detection methods – because dahlias get infected by several different viruses and knowing which one is important to be able to come up with control options. Second, we are exploring methods for virus elimination through tissue culture. Finally, we are studying ways to develop virus resistant varieties. The challenge there is identifying sources of resistance and developing a better understanding of the genes involved in providing that resistance.

ADS: Has the recent ADS support provided by the Sheetz-Chuey Foundation made it possible for you to broaden and/or accelerate your efforts?

HRP: Yes, definitely! It is allowing us to use more resources to study the various facets of my dahlia virology program: research, outreach and educational efforts. The Sheetz-Chuey donation also helped inspire the university to provide additional support for my research. I was given a PhD assistantship, valued at about \$100,000, and the student will be working on viruses. Research on dahlia viruses is quite resource-intensive both in terms of research materials and person hours. Experiments need to be carried out in carefully controlled conditions both in the laboratory and in the field. The donation and the support of the university are extremely important in that regard.

ADS: Perhaps the most exciting recent finding for our dahlia growers was that some of our dahlias do not have virus and that we can strive to have virus-free gardens. What are the key steps for us to follow to achieve that result?

HRP: Yes. One of the most effective ways to reduce viruses in floriculture is to be aware of the virus-induced symptoms and not use the cuttings or tubers from those plants. Our research showed that while viruses continue to be common in dahlias, not all of them are infected. With due diligence and by roguing out diseased plants, we can really make a difference in reducing the virus incidence. *(The brochure to be included with this Bulletin describes the best current strategy for controlling viruses. It was prepared in cooperation with the ADS and with the continuing support of Mr. Chuey and the Sheetz-Chuey Foundation.)*

ADS: We have sometimes blamed the virus-like appearance of leaves on poor plant nutrition. Can we be confident that plants that exhibit symptoms like those shown in the Progress Report brochure included in this Bulletin have virus?

HRP: While insect feeding or over- or under-nutrition will sometimes affect the appearance of dahlia foliage, the symptoms shown here were typically found associated with virus infection. The symptoms that appear can also be influenced by the type of the virus, the dahlia variety,

and the weather. Nevertheless, you can be confident that plants like those shown in the brochure have virus.

ADS: Are you sure that even though we might be able to mask virus in our plants with excellent soil and moisture management we can't cure it?

HRP: That's correct! The old adage, 'out of sight – out of mind' does not work when it comes to dahlia viruses. The plant may look healthy but still be a carrier of the virus. Unfortunately, we still don't have therapies to 'kill' or inactivate a virus inside a plant and thereby cure the plant!

ADS: Thanks very much for your expert perspective. We are delighted to begin to have tools that will help us to control virus in our dahlia gardens!