

Virus Testing Plan for 2017

Introduction

The American Dahlia Society has been working with Washington State University, WSU, on virus in dahlias for about 14 years. In 2015 and 2016, leaf samples from a broad range of home dahlia gardens were evaluated for virus by Professor Hanu Pappu and his group at WSU. The results of that work are available in previous ADS Bulletins as well as on the ADS website, dahlia.org. The analytical work over the last two years was heavily subsidized by the Scheetz-Chuey Foundation, making the costs of the analyses within the reach of many ADS Clubs and ADS members. The Carl F. Chuey Dahlia Virus Research Fund also provided a base for the dahlia research activity by Prof. Pappu at WSU. Mr. Chuey has again agreed to support the testing activities in the 2017 season. This article summarizes those testing plans.

Our experience over the last two years supports two broad generalities. First, plants with poor quality foliage, particularly yellowing on the veins in the leaves, tend to have virus. One of the central pieces of advice provided by Prof. Pappu and supported by this result is to remove plants with poor foliage from your garden to avoid contamination of adjacent plants. The second generality is that "G1" tubers, that is tubers that are taken from plants that were found to be free of virus in the previous year, are the most likely to produce plants that are free of virus in the current year.

There are three key elements of the 2017 plan.

Extension of the Open Testing Program

With the support of the Scheetz-Chuey foundation and the cooperation of Professor Pappu, we will provide the ongoing opportunity for anyone to send groups of samples for evaluation. As in 2016, the minimum order will be 30 samples and the cost will be \$10 per sample. Group orders through a local dahlia club are again encouraged. Some clubs used that approach last year to develop a bigger set of G1 tubers for their auctions this spring.

Order forms for this testing will be available on the ADS website; slightly more detailed information on samples will be required this year.

Free Testing of 2017 Plants Grown from G1 Tubers

With the ongoing support from Jim Chuey, Professor Pappu will test plants grown from G1 tubers at no charge. The free testing applies only to plants that come from tubers from plants that were free of virus in 2016. Three hundred sixty eight plants tested free of virus last year. Tubers from those plants are the G1 tubers. Identification of the supplier and/or the coordinator of the 2016 tests, the name of the cultivar, and the 2016 sample number will be essential inputs to the qualification

of the leaf sample for free testing in 2017.

A detailed description of the recommended approach to starting and growing those G1 plants will have been distributed to the participants or coordinators of the 2016 virus free plants in April. We anticipate that this strategy will lead to a substantially larger pool of G1 tubers for next year.

Testing of Plants of Particular Interest

Members of the virus team (Ron Miner, Brad Freeman, Nick Weber, Jerry Moreno, and Linda Taylor) have identified a set of samples that had results that were particular interesting in 2016. Tubers from those plants will be shared with Professor Pappu to be grown under controlled conditions at WSU and within the virus team to be grown at our various locations around the country. The objective will be to examine the performance of those plants under various growing conditions. They will be tested at least twice during the growing season. There are two types of results that we will be pursuing.

Perhaps the most exciting sets of samples are those where no virus was detected. The spirit of these tests is to further examine plants that have shown resistance to virus. We have, for example, two seedlings that each have tested negative for virus on three different occasions. One of the seedlings was tested once in 2015 and twice in 2016 and was negative for virus in each test. Another interesting set was a group of six samples of Kenora Wildfire where no virus was detected. The plants could be from related stock. They came from clubs in NE Ohio that routinely exchange tubers and plants for auctions.

The second type of samples involve plants where virus was detected. The spirit of these tests is to examine tolerance to virus. We will study the tendency of the virus to carry over into the 2017 plants. We will follow the development of foliage symptoms on the plants. We will test the uniformity of the distribution of the virus in the plants. We will try to determine differences in the development of virus characteristics among the different viruses.

Ongoing Activities

The team will continue to explore avenues of cleaning up virus, like meristem and tissue culture, and assess the practicality of having companies provide those services on a commercial basis. We will monitor and support the genome analysis with the expectation that clues for virus resistance and tolerance may be found there. We solicit your inputs on how better to "Reduce the impact of virus on our dahlia gardens."

Ron Miner, Professor Hanu Pappu and the ADS Virus Team - Brad Freeman, Nick Weber, Jerry Moreno, and Linda Taylor.