

Dr. Manosalva Awarded Grants for Rootstock Breeding and Organic Disease Management Projects

Dr. Patricia Manosalva, assistant professor of microbiology and plant pathology at the University of California, Riverside and director of the Avocado Rootstock Breeding Program, was recently awarded federal grant funds for two research projects of importance to the California avocado industry.

The first pertains to organic disease management. Organic food sales continue to expand across the United States, topping \$50 billion in sales in 2018, and according to the Organic Trade Association the total organic sales of fruits, vegetables and other specialty crops now comprise more than 36% of organic sales. To assist organic growers in meeting consumer demand, the U.S. Department of Agriculture National Institute of Food and Agriculture awarded nearly \$2 million in grant funds to a team of 15 scientists for the “Plant Safety, Horticultural Benefits, and Disease Efficacy of Essential Oils for Use in Organically Grown Fruit Crops: From the Farm to the Consumer” project. Dr. Manosalva is one of the scientists who will work on this four-year project.

The project will:

- Evaluate the horticultural impact of using essential oils in managing disease
- Begin to test plant disease efficacy claims of essential oil products marketed for organic producers
- Evaluate organically certified plant essential oils on targeted pathogens
- Determine the efficacy of essential oils on fruit shelf life

The second project is entitled “Reducing Avocado Losses to Major Challenges by Improving Resistance Selection and Disease Management Using Next Generation Technologies.” The goal of this four-year project is to identify rootstocks and rootstock/scion combinations exhibiting resistance or tolerance to Phytophthora root rot and Laurel Wilt and then conduct field tests to assess the utility and performance of the cultivars. In addition, the researchers will develop and deploy new tools to improve disease management, generate avocado breeding platforms and conduct outreach to share their findings with growers and the industry at large.

The California Avocado Commission has invested over \$20 million in avocado scion and rootstock breeding efforts



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over the past 40 years. Breeding is a slow process with no guarantees of success; also the outcomes potentially benefit avocado growers around the world. For these reasons, as well as to be able to allocate funds to other short-term applied research projects, the CAC Production Research Committee and Board of Directors decided several years ago to reduce the funding allocated to the breeding programs and encourage the University researchers to seek outside funding. It is because of CAC’s past and continued funding that this grant was possible as these grants require 100% matching funds from non-federal sources.

In addition to leveraging CAC’s current funding, Dr. Manosalva was able to utilize the in-kind support of the grower-cooperators who participate in these trials. Currently seven growers have planted large trials in Riverside, Ventura, Santa Barbara, and San Luis Obispo Counties as part of these efforts, with other numerous small plot trials being planted as well. Dr. Manosalva is grateful for the ongoing support of the grower-cooperators in these trials and recognizes that her research program is dependent on their continued support. 🥑