

# The University of California Avocado Breeding Program

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In 2018, the California Avocado Commission decided to no longer fund the scion and rootstock breeding programs at the University of California, Riverside. This was not a decision that was made lightly. Over nearly four decades, California avocado growers, through CAC, had invested millions of dollars into these two programs but with little return.

On at least two separate occasions, the Production Research Committee had assembled an outside team of experts to review the breeding programs and make suggestions on how to improve them and move material through the selection process more quickly to produce new varieties and rootstocks for growers. However, the recommendations of these expert panels were never implemented by the University.

Furthermore, CAC always was frustrated by the slow pace of development from both the scion and rootstock programs. For example, the Uzi, Zentmyer and Steddom rootstocks that were released by UCR in 2012, were selected in 1993 and 1994 by John Menge (the UCR rootstock program is on its second leader since Menge's retirement). Ten years after their release, these rootstocks are marginally successful. Similarly, in the past 20 years the scion breeding program only has released two varieties, Harvest (2002) and a greenskin variety named BL 5-552 (2018). Both were originally selected by Bob Bergh (scion breeding program lead prior to Mary Lu Arpaia) and have seen essentially no commercial success.

Thus, in 2018, the drastic decision to cut all funding to the scion breeding program was made. For the rootstock breeding program, limited funding was continued with the specific goal of conducting commercial-scale trials of the most promising five rootstocks and, if worthy, move them to commercial release, but no funding was provided to develop more new selections.

## Other Funding Partners Sought

Following this decision by CAC, UCR set off to find a new source of funding. They first circulated a plan among California growers and handlers looking to assemble a consortium to commit to providing \$1 million per year for 10 years. This

plan was met with no interest. They then began searching internationally for partners who would be interested in funding the avocado breeding program, eventually signing an agreement with Spain-based Eurosemillas, S.A. for \$2.25 million in 2020.

Eurosemillas has a long history of partnering with the University of California, most notably licensing citrus varieties. Their partnership with UCR for avocados will be developed under a program called Green Motion. Green Motion is being advertised as "an International Platform for leading avocado companies to accelerate plant innovation from science to market."

In recognition of the major investment by California growers in the UCR avocado scion and rootstock breeding programs, UCR has agreed that California growers will still have access to any material released under this new partnership with Eurosemillas and there will be no exclusive licenses issued within California. That is, any California nursery or grower who would like a license to propagate material released through Green Motion will be able to get one. These licenses will be managed by Eurosemillas/Green Motion.

Royalty structure proposed by Eurosemillas for the avocado variety UCR V04 (formerly BL-516/Marvel).			
	Scions	Pollinizer	Rootstock
Nursery	License Fee	License Fee	License Fee
Grower	Royalty per acre per year	Royalty per acre pollinated per year*	Royalty per acre per year
*Where the area planted or grafted with UCR V04 pollinizer is 50% or more, the value of the royalty shall be considered equal to that of a scion. For percentages of planted area less than 50%, the corresponding value shall be applied.			

## New Royalty Model

On July 16, 2022, CAC Vice President of Industry Affairs Ken Melban and I met with representatives of the UCR Office of Technology Partnerships and Eurosemillas and were given a presentation about their proposed royalty program for new varieties.

The first variety planned for release under the new Green Motion program is a scion variety that growers may have heard of called BL-516 or “Marvel.” This is a variety that was originally selected by Bob Bergh and Gray Martin around the same time the GEM variety was selected. Gray believed that “Marvel” was an ideal pollinizer for GEM, but, as seems to be the norm, it has lingered in the system and never been released.

Under the new Green Motion program, the variety is being referred to as “UCR V04” and will not be named “Marvel” due to trademark infringement issues with the Marvel comics brand (they hold the trademark on “Marvel” as it relates to all fresh fruit, excluding strawberries). Green Motion also is promoting the variety as a pollinizer for Hass with fruit similar enough in appearance and with a similar ripening window such that it could be harvested right along with Hass.

The table on the facing column (page 10) was redrawn from what we were shown during our meeting as the proposed royalty structure for UCR V04. As you can see, the new structure is quite different from what California avocado growers are used to. Historically, growers paid a one-time per tree royalty at the time of tree purchase. The new model proposes nurseries pay a license fee for the right to propagate a new variety and the grower will pay an annual royalty in perpetuity based on the acreage planted.

We expressed our concern to the University and Eurosemillas representatives when this structure was presented. They were somewhat taken aback that we didn’t believe the California grower would view this structure favorably. Eurosemillas explained this is their model for citrus and other crops they license from the University elsewhere in the world and they couldn’t understand why we felt so strongly that this model would not succeed with California avocado growers.

We explained that there simply is no track record between the University and the California grower that gives the grower strong confidence in what is being released from the University’s breeding program. Unlike citrus, pistachios or walnuts, for example, the University of California does not have a long (or even short) list of successful

avocado varieties to point to. This fact was met with utter disbelief.

We ultimately settled on accepting that we would not be able to convince them of our viewpoint and left the meeting with the agreement that Eurosemillas would hold grower meetings to try to sell this idea to the California grower. We have not yet heard about any meetings being scheduled, but we will be sure to let the industry know if any meetings are scheduled.

At this point we do not know what the final plan is for releasing UCR V04 (aka “Marvel”). Our understanding is the original plan was to release it in late 2022, but the release has been delayed until sometime in 2023. Nor do we know what the final royalty structure will look like when UCR V04 finally is released. But rest assured, we will do everything in our power to ensure that new avocado varieties — both scions and rootstocks — are released to the California grower under a program that is fair and equitable. 🥑

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