



Update on the 2013 AF36 Application Program

This is a short newsletter to update you on the distribution and application of AF36 for the 2013 pistachio season. As most of you know, AF36 is an exciting new development in the commitment of the California pistachio industry to minimize the presence of aflatoxin in our product. Aflatoxin is a mycotoxin by-product of the mold fungi, *Aspergillus flavus* and *A. parasiticus*, which are found in MANY crops, including pistachio. The pistachio industry strictly regulates the presence of aflatoxin to insure that California pistachios are of the highest quality. The European Union also limits the importation of pistachios from any foreign country to 10 ppb (parts per BILLION) aflatoxin. Our commitment to food safety has allowed California pistachios to routinely meet this very strict level.

In our continued commitment to food safety and production excellence, the University of California, USDA-ARS, and California Pistachio Research Board, collectively researched and developed an organically approved program in which a NATURALLY OCCURRING, NON-TOXIN-producing strain of *Aspergillus flavus* is now ready for industry-wide use. This non-toxin-producing strain is known by scientists as AF36. It is NOT a GMO! Rather, it is a naturally occurring strain that scientists isolated and then developed a method for commercial application using wheat seed as the distribution vehicle. Since AF36 does NOT produce aflatoxin, wheat seed infected with this strain can be spread in the berm area of the orchard where it is wetted with irrigation water. The wheat seed then molds and produces AF36 spores, which then begin to dominate the population of *Aspergillus* strains within the orchard ecosystem. Within just

ONE year, the non-toxic AF36 strain becomes HALF of the total *Aspergillus* population, thus greatly reducing the probability of having an aflatoxin-producing strain come into contact with the crop. The AF36 program is currently used commercially in California, Arizona, and Texas cotton production for the reduction of aflatoxins in cottonseed. AF36 now has full EPA registration for use in pistachios grown conventionally and organically, and the program has been implemented across most of the pistachio acreage owned by Paramount Farms.

The industry is indebted to the following researchers for the dedication over 20 years to accomplish this ecologically sound pest management advancement: Dr. Themis Michailides, UC Davis; Dr. Mark Doster, Post-Doctoral Researcher; David Morgan, Staff Research Associate; and Dr. Peter Cotty, USDA Plant Pathologist. In addition, numerous laboratory assistants and interns contributed to the success of this project funded by the California Pistachio Research Board directed by Dr. Bob Klein and the USDA Aflatoxin Elimination Program..

Late May through early July is the application time for AF36. To assist you in further understanding the AF36 program and how to implement it, two videos were made in cooperation between the University of California, Pistachio Research Board, and Paramount Farming. They are posted this week on my Kings County website (<http://cekings.ucdavis.edu/>), and at the California Pistachio Research Board (<http://www.calpistachioresearch.org/>).

If you chose my website, select “Educational Videos” from my main menu page. They are under “AF36 use in pistachios” at the bottom of the page. Your processor may also be posting them for your review.

The first video outlines the biology behind the AF36 program. The second video covers the required equipment and wheat seed application. The AF36 wheat seed can be purchased through your chemical distributor. Application of the seed is accomplished in the video using a Kasco manufactured, Herd spreader, Model GT-77. In anticipation of the demand for this spreader, I contacted both the manufacturer and the California distributor, Solex, in Dixon. Their phone number is (707) 678-5533. I recommended that they contact their retailers to alert them to the possible “run” on this spreader, in hopes that equipment availability does not become the limiting factor in program implementation. Here is the link for Herd GT-77 instruction manual;
<http://www.kascomfg.com/public/wp-content/uploads/2010/09/GT-77ATV.pdf>.

Time constraints and budget cuts prevented the use of field meetings to present this program. The videos also have the added benefit of repeated review.

Researchers, UC farm advisors, and industry leaders all hope that growers seriously consider the positive impact this program can have on our quest to keep California pistachios a leader in food quality and safety. Participation in this exciting program can greatly increase our ability to maintain aflatoxin levels below the very strict levels established for European export.

Questions regarding use of AF36 can be directed to your local farm advisor’s office or Dr. Bob Klein at the California Pistachio Research Board.

Happy Farming!

Bob

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