



Arizona Farm Bureau Federation

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U.S. Environmental Protection Agency
EPA Docket Center (EPA/DC), 28221T
1300 Pennsylvania Avenue, NW
Washington, DC 20460-0001

RE: Docket No. EPA-HQ-OPP-2015-0291; Registration Reviews Draft Human Health and/or Ecological Risk Assessments for Several Pesticides – Mancozeb

To Whom It May Concern:

The Arizona Farm Bureau Federation represents farmers and ranchers from across Arizona. Our members produce an array of crops and livestock that contribute over \$23.3 billion of economic impact to the state. Our comments below address the Environmental Protection Agency's (EPA) draft human health and ecological risk assessments of mancozeb and the important role this chemistry provides to the success of Arizona's agricultural crops.

The most significant agricultural use of mancozeb in Arizona is on lettuce (head, leaf, and romaine), cabbage, onion and onion seed, broccoli. To a lesser extent, mancozeb is also used on sugar beets, potatoes, spinach, garlic, and fennel. Mancozeb is an important fungicide used to address fungal diseases impacting all these various crops.

Downy mildew is a fungal disease which injures plant tissues and reduces yields. The disease mars and damages the surface of leaves and can also cause systemic infection in Brassica crops causing discoloration within the plant. Although the disease may not kill plants, in the case of lettuce, significant cosmetic damage makes the product unmarketable. Given that 95% of the leafy vegetables consumed in the U.S. from November to March are produced in Arizona, controlling fungal diseases such as downy mildew is significantly important. Arizona's winter production of broccoli and cabbage is also significant. According to USDA's National Statistics Service, the 2020 value of the state's broccoli and cabbage production was \$92 million and \$32 million, respectively.

Pest control advisors (PCA) who work with lettuce and Brassica crops highlighted the importance of mancozeb, as it often used in tank mix application with other fungicides (i.e., Alliette). This is primarily done with fungicides whose label recommendations for resistance management suggest tank mixing with fungicides with different modes of action, but that are also effective on the same diseases. Mancozeb often works well for this purpose and is also a cost-effective option.

Mancozeb is also an important fungicide used in both dry onion and onion seed crops. According to USDA National Agricultural Statistic Service, in 2017 there were 2,154 acres of onion and 1,312 acres of

vegetable seed produced under open air production in Arizona.¹ The USDA seed data is not broken down for the various seeds produced in the state. However, the onion seed grown in Arizona is a high-quality seed for export and contributed to the \$3.8 million in vegetable seed sales in 2017. Downy mildew and purple blotch are the primary fungal diseases for which mancozeb is used. However, it is also effective against other less pervasive diseases such as leaf blight and neck rot. PCAs using mancozeb in onions production also noted the product is often used along with fungicides with a different mode of action for resistance management. Some reported using products such as Ridomil Gold MZ, which is a premix of mancozeb and mefenoxam.

According to data collected by the Arizona Pest Management Center, usage has been consistent over the past several years in lettuce, broccoli, cabbage and onion production. PCAs noted, in dry years when there is not much rain or moisture to foster the fungal diseases, usage is lower. However, when rain occurs, growers often begin applying fungicides as a preventive, to get ahead of any downy mildew or other fungal disease that may arise.

Because fungi are adaptable organisms and can become resistant to fungicides, ensuring mancozeb continues to be available is important for maintaining a robust fungicide resistance management program. According to Mike Matheron, former University of Arizona Extension Plant pathologist, such a program should rotate among products with different modes of action to delay development of resistance to active ingredients within a pathogen population.¹ And as noted earlier, mancozeb is often either tank mixed or included in prepackaged materials to address resistance management.

Mancozeb is an important crop protection tool for many growers in our state and has been used for many years without evidence of an unreasonable risk to human or environmental health. All crops grown in Arizona on which mancozeb is used would be negatively impacted if it were no longer available or if major restrictions were put on its use as a crop protection tool. For those reasons, we urge the EPA to continue to allow its use.

Sincerely,



Stefanie Smallhouse, President
Arizona Farm Bureau Federation

¹ Matheron, Michael. "Biology and Management of Downy Mildew of Lettuce." College of Agriculture and Life Sciences Cooperative Extension, az1682, September 2015. Available online at https://desertagsolutions.org/sites/desertagsolutions.org/files/az1682-2015%20downy%20mildew%20of%20lettuce%20Cooperative%20Extension%20Publication_MM.pdf