Arizona Farm Bureau Federation
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April 20, 2018

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

RE: Docket Nos. EPA-HQ-OPP-2011-0865 (Clothianidin)
EPA-HQ-OPP-2011-0920 (Dinotefuran)
EPA-HQ-OPP-2008-0844 (Imidacloprid)
EPA-HQ-OPP-2011-0581 (Thiamethoxam)

Dear Sir or Madam:

The Arizona Farm Bureau represents farmers and ranchers from across Arizona. Our members produce an array of crops and livestock that contribute over $23.3 billion in economic impact to the state. Many of our members rely on neonicotinoid pesticides as a crop protection tool to produce high quality crops and sustain their operations. Our comments below address the Environmental Protection Agency's (EPA) draft ecological non-pollinator risk assessment for the registration review of imidacloprid and the draft human health and non-pollinator ecological risk assessment for the registration review of clothianidin, thiamethoxam, and dinotefuran. Because the EPA is required by law to take into account the beneficial aspects of substances in evaluating their appropriateness for registration, we believe the agency needs to be fully aware of the critical role these chemistries provide to the success of a number of Arizona's crops.

Each of the neonicotinoids referenced in this letter are important to several of Arizona's staple crops, including leafy greens, vegetables (cole crops), melons, cotton, and citrus. They are especially important to the production of leafy greens and vegetables, since Arizona is responsible for nearly 95% of the leafy vegetables consumed in the U.S. from November to March. These are high value crops with strict quality standards that allow for little to no damage or contamination of the harvested product. Therefore, controlling various pests from infesting and contaminating leafy vegetables is critical.

Clothianidin, dinotefuran, and thiamethoxam offer flexibility for producers, as they are applied through various modes either as a soil application, foliar application or seed treatment. The production of cole crops provides a useful example of the use of these different applications that can be used to control damaging pests, such as the Bagrada bug. The Bagrada bug became a major pest in cole crops starting in the fall of 2010, causing economically significant stand losses and yield quality reductions to broccoli, cauliflower, and cabbage.[1] Foliar applied dinotefuran has been effective in controlling adult Bragada

[1] Palumbo, John C., "Impact of Bagrada Bug on Desert Cole Crops: Seven Years After the Outbreak." Veg IPM Update, Vol. 8, No. 10, May 17, 2017. Available online at:

bugs in mature plants, while clothianidin has been used as a seed treatment in broccoli to provide control against Bragada adults during stand establishment. Although neonicotinoids are not the only chemistry available to deal with this particular pest, they are an important component, especially to ensure effective resistance management programs. Furthermore, not having these products would result in the of use older, more broadly toxic insecticides.

Dinotefuran has also been an important product for addressing whitefly damage in melon production. Whitefly is a vector for cucurbit yellow stunting disorder virus (CYSDV) which causes a yellowing of leaves, reduced plant growth, and smaller, less desirable fruit. Melons grown in Arizona make up a significant portion of the melons produced in the United States. According to 2014 United States Department of Agriculture National Agricultural Statistics Service, Arizona ranks second to California in the production of cantaloupes and honeydews. Therefore, ensuring growers have access to products such as dinotefuran to combat pest and disease that reduce production and yield levels is vitally important.

Thiamethoxam is a product used in Arizona to tackle aphid infestations in lettuce and vegetables crops. Aphids are one of the most significant problems facing the lettuce industry, causing economic damage to lettuce through direct injury, virus transmission, and contamination of heads.[2] Consequently, having as many options as possible to tackle these pests is critical to preserving both quality and yield.

A recent study conducted by the University of Arizona found that imidacloprid is applied as soil systemic on more than 85% of the lettuce acres in Arizona to control both whiteflies and aphids.[3] According to Dr. John Palumbo, Research Scientist and Extension Specialist at the University of Arizona, there are other alternatives to imidacloprid, but they are not as effective and are much more expensive to use. Additionally, he notes that if growers were to lose the use of imidacloprid on lettuce and cole crops the cost of production would increase significantly. Growers would be forced to rely on multiple foliar spray applications, and the use of pyrethroids, organophosphates, and carbamates, all broad-spectrum insecticides and older chemistries, would increase greatly.

It would not be an exaggeration to suggest that the first approved use of imidacloprid in fall vegetable production in Yuma in 1993 was keystone to saving the industry from collapse there[4]. Today, it still functions to maintain plant health in the face of large populations of whiteflies immigrating from other source summer crops. Furthermore, the University of Arizona, under Dr. John Palumbo's leadership, has developed, promoted and maintained landmark neonicotinoid sharing agreements among cotton, melon and vegetable growers.[5] These guidelines are referred to worldwide as models for proactively

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https://cals.arizona.edu/crops/vegetables/advisories/docs/170517%20Bagrada%20Bug%20Survey_2016_%20Seven%20years%20after%20outbreak_report.pdf. Accessed on July 14, 2017.

[2]Palumbo, John C., "Impact of Planting Date on Aphid Infestations and Compensation in Head Lettuce." Veg IPM Update, Vol. 7, No. 23, November 11, 2015. Available online at: "https://cals.arizona.edu/crop/vegetables/advisories/docs/111115_Lettuce_Planting_Date_Impact_on_Aphid_Species.pdf. Accessed on July 18, 2017.

[3] Palumbo, John C., "2015 Insecticide Usage on Arizona Lettuce," UA VegIPM Update, Vol. 6, No. 12, June 10, 2015, http://ag.arizona.edu/crop/vegetables/advisories/docs/061015_Insecticide_Usage_Summary_in_Lettuce_2015.pdf

[4] Palumbo, J. C., Horowitz, A. R., and Prabhaker, N. (2001). Insecticidal control and resistance management for *Bemisia tabaci*. Crop Protection 20: 739-765.

[5] Palumbo, J. C., Ellsworth, P. C., Dennehy, T. J. and Nichols, R. L. (2003). Cross-Commodity Guidelines for Neonicotinoid Insecticides in Arizona. IPM Series 17. Publ. No. AZ1319. University of Arizona, College of Agriculture

organizing agricultural stakeholders around common goals of product stewardship and resistance management.

The use of imidacloprid is also critical in the movement of citrus nursery stock. Because of the Asian Citrus Psyllid found in certain parts of Arizona, citrus nursery stock within the quarantine areas are treated with imidacloprid prior to out-of-state shipment. Furthermore, according to Brian McGrew, Quarantine Program Coordinator, Plant Services Division of the Arizona Department of Agriculture, imidacloprid is also an important tool for the citrus growers because of maximum residue levels that restrict the use of certain alternative products in some markets. He also notes the importance of maintaining imidacloprid as a tool to protect the Arizona citrus industry against potential infection from citrus greening disease (Huanglongbing), and also as another product to rotate to for resistance management.[6]

Clothianidin, dinotefuran, imidacloprid, and thiamethoxam are important pest management tools for many growers in our state and we do not believe that these products, which have been used for a number of years, pose any unreasonable risk to health or the environment. All crops grown in Arizona on which clothianidin, dinotefuran, imidacloprid, and thiamethoxam are used would be negatively impacted if they were no longer available as crop protection tools. For those reasons, we urge the EPA to continue to allow their use.

Sincerely,

Stefanie Smallhouse, President
Arizona Farm Bureau Federation

and Life Sciences, Cooperative Extension, Tucson, Arizona. 4 pp. URL: http://arizona.openrepository.com/arizona/handle/10150/146722

[6] Fournier A.J., P.C. Ellsworth, W.A. Dixon II. 2016 Imidacloprid Use in Arizona Citrus. University of Arizona, Arizona Pest Management Center. http://ag.arizona.edu/apmc/docs/Imidacloprid-Use-In-Arizona-Citrus_4-14-16.pdf.