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Response to EPA's Proposed Interim Decision for DCNA (Dicloran)

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Comments submitted by the Arizona Pest Management Center,
University of Arizona

Date: March 26, 2023
Docket ID: EPA-HQ-OPP-2016-0141
Re: EPA's Proposed Interim Decision for DCNA (Dicloran), Case Number 0113

To Whom it may concern:

The EPA is seeking public comments in response its Proposed Interim Decision for Dicloran, also known as DCNA. Dicloran is a fungicide registered for use in the management of *Sclerotinia sclerotiorum*, *Botrytis*, and various molds and rots in celery, lettuces, onions and other crops. In Arizona, dicloran is used almost exclusively in celery, where it is a valuable tool for the control of pink rot, a damaging disease that under the right conditions can cause plants to collapse at the base and can lead to significant yield losses (Koike et al. 2008). We wish to outline current use practices for dicloran in Arizona celery and respond to EPA's proposed risk mitigations.

During the draft Risk Assessment stage of registration review, we contributed expert information to comments submitted by the Arizona Farm Bureau Federation on the benefits of dicloran use in Arizona celery production (EPA-HQ-OPP-2016-0141-0026). We wish to integrate those previous comments by reference into this response to EPA's Proposed Interim Decision for DCNA. In developing the current comments, we examined updated pesticide use data and solicited feedback from impacted stakeholders to verify use patterns, identify benefits of use, potential alternatives, and anticipated impacts of EPA's proposed mitigations on growers.

Dicloran Use in Arizona Celery

Reported uses of dicloran in Arizona are almost entirely on celery, with very few uses reported uses on lettuce or onion (Fournier 2017). Celery is not a major crop in Arizona in terms of acres, but there is significant production, much of it for export, and in recent years production has been expanding. In celery, dicloran (Botran 5) is used consistently over a significant number of acres each year. According to licensed Pest Control Advisors (PCAs) and The University of California IPM Celery Pest Management Guidelines (Koike et al. 2008), dicloran is an effective preventative treatment against pink rot (*Sclerotinia sclerotiorum*). Some PCAs consider dicloran to be the best and most consistent option for control of pink rot, both in terms of efficacy and

because the treatment lasts a long time, reducing the need for additional fungicide applications. For 25 to 30 years, dicloran has been a key part of a standard preventative treatment for Sclerotinia in celery. It is effective and economical for Arizona growers.

Application timing and method can vary by grower. One approach is to apply Botran 5 by ground after the first cultivation, when the celery is from 8 to 14 inches tall. A single application at 1.87lb a.i./A provides long lasting control of Sclerotinia. If a second fungicide application is needed, growers rotate to a different chemistry and mode of action.

In other cases, a single application of Botran, tank-mixed with Tilt (propiconazole), is applied half-way through the 120-day crop cycle, around the time when the rows are starting to close. This application occurs while celery hearts are exposed, which increases effectiveness of the application. Aerial applications are used, at or near the full label rate. They apply by air because celery is too tall at this point for a ground rig to get through the field, and because of frequent irrigations, the field is often too wet to accommodate ground equipment.

Growers strive to minimize drift with any aerial application, but with Botran, because the chemical tends to miscolor foliage, leaving a yellow residue, it is clear if the chemical is moving offsite onto other crops. About 70% of aerial applications are made with helicopters instead of airplanes. In addition, they apply the chemical with at least 50 ft. buffer zones, and sometimes add a drift retardant to the tank to further reduce risks of spray drift. If they are close to spinach or leaf lettuce, growers may avoid spraying that side of a field altogether.

Application rates across all applications range from 0.63 lbs. a.i./A to 2.5 lbs. a.i./A, with a median of 1.82 and a mean of 1.79 lbs. a.i./A.

Although alternative fungicides are registered for use in celery, including Quadris (azoxystrobin) and Fontelis (penthiopyrad), some PCAs indicate they get better and more consistent control with dicloran. In addition, with dicloran they can control pink rot with “a single shot,” whereas other fungicides with shorter residuals require multiple applications. One PCA estimates it would take 2 to 3 sprays to control pink rot if they were to lose access to dicloran, increasing production costs for growers. In addition, as a FRAC 14 material that is not used in lettuce, onions, or other vegetable crops to any extent in Arizona, dicloran plays an important role in cross-commodity resistance management.

Nonetheless, it is important to note that not all commercial celery growers rely on dicloran for pink rot control. Should EPA impose mitigations that make it impossible for growers to use dicloran, celery could still be produced in Arizona.

Response to Proposed Mitigations for Dicloran

<u>Prohibit all aerial applications due to risk to bystanders</u>
As indicated in comments submitted by the Arizona Farm Bureau Federation in response to draft risk assessments (AZFB 2021, EPA-HQ-OPP-2016-0141-0026), aerial applications of dicloran are common, if not the dominant practice in Arizona celery. EPA seemed to overlook this data,

based on its statement in the Proposed Interim Decision, "Using the best available data, DCNA is mostly, if not entirely applied by ground." As noted above, application method in Arizona celery depends largely on timing of the application. For growers applying at a stage when the crop is taller and irrigations are frequent, ground applications are not a viable option. However, some growers successfully use dicloran at an earlier stage, and apply by ground almost exclusively. We understand and agree with the need to protect bystanders based on EPA's risk assessments for dicloran, though we hope EPA will also make note of the spray drift mitigations already employed by growers when applying dicloran by air, as documented above.

Minimum REI of 58 days for celery

Pest Control Advisors familiar with crop management practices in celery agree with EPA's assessment that imposing a 58-day REI in celery "would effectively cancel DCNA's use" in this crop. Celery is a labor-intensive crop. As one PCA put it, "people are always in the field, irrigating or scouting." At a minimum people typically enter the crop at least every two to three days. One contact noted, a 58-day pre-harvest interval (PHI) would not have been a problem, because celery is such a long crop, with a growing season around 120 days long. Dicloran is applied half-way through that, or even earlier. However, as an REI, 58 days is unworkable in this crop for Arizona growers.

Based on EPA's 2021 draft Human Health Risk Assessment, our understanding is that EPA used a dislodgeable foliar residue study for snap beans, since comparable data from celery were not available; also, that because EPA identified cause for concern for potential developmental neurotoxicity, and data are lacking, this data gap influenced the level of concern EPA established to be protective of workers. Based on dialog with knowledgeable colleagues from the USDA Office of Pest Management Policy, given these data gaps and constraints, even accounting for lower use rates of dicloran in Arizona celery, it is unlikely REIs could be lowered enough to make dicloran a feasible fungicide option for our growers. Nonetheless, we understand and agree with the need to protect workers based on EPA's risk assessments and best available data. Pest Control Advisors have acknowledged that there are viable alternatives to dicloran in celery, although management costs are expected to increase for growers.

Who We Are

The Arizona Pest Management Center is host to the University of Arizona's expert IPM scientists including Ph.D. entomologists, weed scientists and plant pathologists with expertise in the strategic tactical use of pesticides within IPM programs that protect economic, environmental and human health interests of stakeholders and the society at large.

Dr. Al Fournier is Associate Director of the APMC / Associate Specialist in Entomology, holds a Ph.D. in Entomology, and has expertise in evaluating adoption and impact of integrated pest management and associated technologies. He serves as an Integrated Pest Management Network Coordinator through the Western IPM Center Signature Program, representing stakeholders in the desert Southwest states in EPA registration reviews. Mr. Wayne Dixon holds a B.S. in Computer Information Systems and develops tools and data used in IPM research, education and evaluation, including management of the APMC Pesticide Use Database.

These comments are the independent assessment of the authors and the Arizona Pest Management Center as part of our role to contribute federal comments on issues of pest management importance and do not imply endorsement by the University of Arizona or USDA of any products, services, or organizations mentioned, shown, or indirectly implied in this document.

Our Data and Expert Information

Through cooperative agreements with Arizona Department of Agriculture, the Arizona Pest Management Center obtains use of, improves upon, and conducts studies with ADA's Form1080 data. Growers, pest control advisors and applicators complete and submit these forms to the state when required by statute as a record of pesticide use. These data contain information on 100% of custom-applied (i.e., for hire) pesticides in the state of Arizona. Grower self-applied pesticide applications may be under-represented in these data. In addition, we actively solicit input from stakeholders in Arizona and other Southwest states (Nevada, Colorado, New Mexico and Southeastern California), including those in the regulated user community, particularly to better understand use patterns, use benefits, and availability and efficacy of alternatives. The comments within are based on the extensive data contained in the Arizona Pest Management Center Pesticide Use Database, collected summary input from stakeholders and the expertise of APMC member faculty.

Thank you for the opportunity to comment. Please feel free to contact me with any questions.

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References

Fournier, A., W. Dixon, P.C. Ellsworth. 2017. Arizona Pest Management Center Pesticide Use Database. University of Arizona Cooperative Extension.

Koike, S.T., Davis, R.M., Turini, T.A. 2008. Pink Rot. In: University of California (UC) Integrated Pest Management (IPM) Pest Management Guidelines: Celery. http://ipm.ucanr.edu/PMG/r104100411.html [Accessed March 14, 2023].

Arizona Farm Bureau Federation (AZFB) 2021. Docket No. EPA-HQ-OPP-2016-0141; Registration Reviews Draft Human Health and/or Ecological Risk Assessments for Several Pesticides – Dicloran. Docket ID Number EPA-HQ-OPP-2016-0141-0026. https://www.regulations.gov/comment/EPA-HQ-OPP-2016-0141-0026