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Dr. Elissa Reaves
Director Pesticide Reevaluation Division
Environmental Protection Agency
Docket Center (EPA/DC) (28221T)
1200 Pennsylvania Ave. NW.
Washington, D.C. 20460-0001

Re: Draft Endangered Species Act (ESA) Biological Evaluations for the Registration Review of Clothianidin, Imidacloprid and Thiamethoxam. Docket number EPA-HQ-OPP-2021-0575

Dear Dr. Reaves:

The California Citrus Quality Council (CCQC) and California Citrus Mutual (CCM) represent the California citrus industry including approximately 2,000 growers and approximately 85 citrus packers on technical and regulatory issues domestically and overseas. The total annual farmgate value of California citrus production is $2.3 billion, and the industry employs over 21,000 employees. We appreciate this opportunity to comment on the Environmental Protection Agency's (EPA) biological evaluations of imidacloprid and thiamethoxam. Clothianidin is not registered for use on citrus in California.

We concur with EPA's decision not to propose mitigation restrictions for California citrus growers, since the typical citrus uses of imidacloprid and thiamethoxam in California are very unlikely to harm endangered or threatened species or their critical habitat. Imidacloprid is the keystone in California's efforts to control the Asian citrus psyllid (ACP), which spreads Huanglongbing (HLB), a plant disease that kills citrus trees and has no cure. The loss of imidacloprid would threaten the existence of commercial citrus production in California.

If HLB were to spread unchecked in California, a 20 percent reduction in acreage would be the minimal loss of acreage. In 2018, the University of California estimated that a 20 percent reduction in citrus acreage would result in the loss of approximately 7,350 jobs, $127 million in employee income, and a reduction in state gross domestic product (GDP) of $501 million.

Thiamethoxam is also a critical use for California citrus growers. It is the primary tool that is used to comply with a mandatory export protocol for citrus exports to Korea, the industry's largest market for oranges. Thiamethoxam can also be used to control ACP, but it is primarily used to control Fuller rose beetle (FRB), which is a quarantine pest in Korea.

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Imidacloprid is an Essential Tool for Controlling ACP

The California citrus industry is facing its greatest threat since the 1870s when commercial citrus shipments began. ACP is spreading HLB, a bacterial disease with no cure, into southern California, primarily in Orange, Los Angeles, Riverside and San Bernardino Counties. HLB attacks a citrus tree's nutrient transport system causing infected trees to drop leaves and fruit. The tree dies within four to 12 years depending on the age and overall health of the tree. While trees may survive as long as 12 years, the disease also reduces fruit quality and ruins the taste of the fruit. Since California produces citrus intended primarily for the fresh market, reduced fruit quality will reduce demand for California citrus and jeopardize the economic viability of citrus production even before the diseased trees die. Despite millions of dollars being spent on research, no cure has been identified. The California citrus industry's number one priority is stopping the spread of HLB.

With no cure in sight, the best defense against HLB infection is to control ACP, the vector that spreads the disease. HLB can only spread through grafting, dissemination of infected nursery stock or if it is transmitted from tree to tree by infected ACP. The California citrus industry is working in collaboration with the California Department of Food and Agriculture (CDFA) to monitor residential properties and commercial groves for the presence of ACP and HLB. CDFA makes pesticide applications to residential properties when positive trees are identified. In addition, citrus growers have formed citrus pest management areas to coordinate pesticide applications in commercial groves. CDFA has also targeted high risk urban areas where an ACP parasitic wasp is being released. CDFA works in tandem with the USDA's Animal and Plant Health Inspection Service (APHIS) to administer a multilayer regulatory program that includes regulation of nursery production, movement of harvested fruit, ACP and HLB monitoring, residential treatments and tree removal, production and dissemination of an ACP predatory wasp, areawide ACP treatments and a multimillion-dollar research program. These activities are coordinated with industry-funded public service communications, research and laboratory services.

The most accurate information on actual imidacloprid and thiamethoxam use is from the California Department of Pesticide Regulation, which maintains a database of pesticide use in California. CCQC recommends that regulatory agencies use these data to estimate potential exposure to endangered and threatened species since it is a reliable record of what is actually being used in California citrus production. When these data are used, there would be no need to estimate use by making assumptions on the amount of use. Since the database does not generally provide information on how pesticides are used, we are providing additional information on the most common use patterns.

Imidacloprid is mostly used as a soil application to control ACP and other economically important insects such as aphids, California red scale, citrus leafminer and citricola scale. It is applied through irrigation emitters underneath the tree canopy, typically at a rate of 14 ounces of formulated product per acre. Since imidacloprid (Admire Pro®) and thiamethoxam (Platinum®) are systemic insecticides, they can translocate from the roots to the foliage of the tree. When applied in this manner, foliar applications are not necessary, so the vast majority of applications are made through irrigation systems and not by airblast sprayers. This means that the vast majority of applications do not involve drift, and little, if any, of the grove environment is exposed to residues from this treatment. Additionally, these treatments are self-contained in the tree rows. No applications are made to the rows between the trees, so the normal treated area in a citrus grove is approximately one-half of the total acreage.

Soil Uses of Neonicotinoids are Critically Important

Several different pesticides are used to control adult ACP. However, the two most effective tools for ACP control are the neonicotinoids imidacloprid, applied systemically through the irrigation system, and thiamethoxam applied as a foliar spray. Use of imidacloprid as a soil application allows the industry to minimize the number of foliar pesticide applications to control adult ACP, since systemic imidacloprid reaches new leaf tissues and thus is very effective in controlling nymphs that can hatch and develop between foliar applications. When nymphs are controlled, adult populations do not develop. Without imidacloprid, citrus growers would be required to make more frequent foliar pesticide applications resulting in more pesticides being used, since foliar applications are not as effective as imidacloprid soil drenches in controlling nymphs. The soil use of imidacloprid is usually effective for three months while foliar pesticides are only effective for up to one month.

The loss of imidacloprid soil treatments would, in turn, require three times as many pesticide applications to control ACP. This increased use of pesticides could reduce populations of beneficial insects, which would cause outbreaks of insects that are presently controlled through natural biocontrol or the systemic effect of imidacloprid. This would devastate integrated pest management (IPM) programs and increase the use of pesticides to control outbreaks of secondary pests. In this sense, imidacloprid soil treatments actually reduce the risk to endangered or threatened species. If the imidacloprid soil use was cancelled it would likely be replaced by multiple foliar treatments of pyrethroid pesticides applied by airblast sprayers, that have a greater potential to impact the environment.

While ACP control is the citrus industry's major use of neonicotinoids, they are also essential for control of the glassy-winged sharpshooter (GWSS), a major vector for the spread of Pierce's disease (*Xylella fastidiosa)* in grapes. Pierce's disease threatens California's table grape, raisin and wine industries, because there is no cure for the disease and once vines are infected, they usually die within five years.

The California citrus industry collaborates with grape growers to control the GWSS, which overwinters in citrus groves and is a preferred host for population development. Citrus is a major host for GWSS which can survive during the winter by feeding in citrus groves. GWSS also prefer to lay their egg masses in citrus leaves which often leads to the development of very high pest populations in citrus groves. Therefore, control in citrus groves is essential in reducing GWSS populations and assists the grape industry in managing those populations. Neonicotinoids play an important role in this objective.

Imidacloprid soil treatments are also used in an area-wide program to control aphids around the Lindcove Research Center. Aphids are a vector for the citrus tristeza virus, which reduces tree vigor and kills branches and trees. Citrus tristeza reduces productivity and yield and slows tree growth. If citrus tristeza became established at the Lindcove Research Center it would jeopardize the entire center, since research cannot be conducted on unhealthy trees. The loss of the soil use of imidacloprid will make it more difficult to control the spread of tristeza virus in the region particularly around the research center, require more pesticide applications and jeopardize the viability of the research center.

The loss of imidacloprid would also eliminate an important tool for control of citrus leafminer and citricola scale. Citrus leafminer is a harmful insect that burrows into leaves and feeds inside

of the leaf. As nymphs grow during the season, they consume more of the leaf, damaging the ability of the leaves to create the energy that trees need to grow. Young trees can become stunted by high populations of leafminers. Early tree growth is important in establishing new citrus groves and a significant factor in the long-term profitability of the grove. Optimal control is achieved by using systemic pesticides. Systemic neonicotinoids are essential for managing leafminers because they provide longer lasting control than foliar treatments. The neonicotinoids are the only systemic pesticides available for leafminer control in citrus.

Citricola scale is another significant pest that is normally controlled with applications of imidacloprid and thiamethoxam. Citricola scale feeds on leaves, twigs and small branches and exudes a sugary substance known as honeydew. Heavy populations of citricola scale lead to severely reduced yields and smaller fruit size.

The loss of imidacloprid and thiamethoxam would create significant problems for citrus growers especially in controlling leafminer and citricola scale. Inadequate control of these insects reduces yields and fruit size, thereby reducing grower revenue. Growers are under significant economic pressure because of the high cost of labor, water and other inputs. Reducing the availability of imidacloprid or thiamethoxam will increase citrus growers' cost of production by requiring more pesticide applications to control the pests these products currently control. These grower production costs are extremely difficult to pass on since retailers have significant market power. Reduced profitability is the primary reason that small growers and packinghouses go out of business in California. Disregarding this reality would contribute to greater packinghouse consolidation, larger citrus operations and fewer citrus growers.

Thiamethoxam is Critical for Exports to Korea

The most significant use for foliar applications of thiamethoxam are for Fuller rose beetle (FRB) control. Growers usually make one application in the spring, after bloom, and another in the fall to meet a regulatory protocol required by Korean phytosanitary regulatory authorities for this pest. Growers generally apply between 4 and 5.5 ounces of formulated thiamethoxam per acre for each application. These applications are being made during periods when pollinators are not present in citrus groves or near citrus groves, so pollinators would not be affected by these foliar applications.

California ships approximately $159 million of oranges to Korea, which represents 31 percent of all U.S. orange exports. Before packers can export to Korea, they must follow a protocol, which is imposed by Korean regulators, that requires two pesticide applications and other measures to control FRB. If thiamethoxam applications were prohibited, growers would be forced to use more pyrethroids for control of FRB, which will increase the potential for resistance development in pyrethroids and other alternatives. This will also increase the difficulty of compliance with the Korean protocol and jeopardize California citrus industry's market access to Korea.

Citrus Nursery Production Requires Imidacloprid and Thiamethoxam

With the introduction of ACP and HLB into the California production environment, citrus nursery production has undergone a major transformation. Distribution of infested and/or infected citrus nursery stock is a significant potential pathway for the spread of ACP and HLB. CDFA regulations require treatment of citrus nursery stock before shipping to retail nurseries. These requirements include the application of a soil drench with a systemic insecticide capable

of controlling ACP. Currently, the only systemic insecticides approved for such application are neonicotinoids. Treatment of citrus nursery stock prior to shipment is an essential use; it protects the trees from ACP infestation, thereby minimizing the risk of spreading ACP and HLB through the pathway of citrus nursery stock, especially in retail outlets in urban areas where it is difficult to control ACP. Given the long residual efficacy of the treatment, it also protects the small trees from ACP infestation while in retail nurseries. These uses are drench applications that result in very little, if any environmental exposure. The majority of the trees being treated are too young to produce fruit, so there are usually no blossoms present when the trees are treated, so there is very low likelihood of any exposure to pollinators.

Bee Protection in Citrus

It should be noted that the California citrus industry maintains a formal system designed to protect honeybees during citrus bloom. In each major citrus producing county, a committee of industry experts and county enforcement officials establish citrus bloom periods when the use of pesticides is severely regulated. Beekeepers are required to register the location of their hives with county agriculture commissioners, so growers can communicate with beekeepers before pesticide applications are made. Imidacloprid and thiamethoxam are prohibited from use during bloom and 10 days prior to bloom in bee protection areas. This system protects honeybees from exposure to pesticide applications when the bees are most vulnerable and have proved highly effective in preventing accidental pesticide exposure to bees and other pollinators during bloom periods.

Biological Evaluation Methodology

While we agree with EPA's decision not to propose additional mitigations on the use of imidacloprid and thiamethoxam in California citrus production, we continue to have concerns about EPA's overly conservative methodology for determining risk to endangered and threatened species.

EPA's methodology evaluates the effect of active ingredients on an *individual* in a species population. We do not endorse specific harm to any individual species in a population. However, EPA should consider more factors in making a final decision on the level of protection to afford endangered and threatened species. This should include the type of effect, relationship to the population and how the effects could be mitigated. In short, EPA should focus on growth, mortality and reproduction endpoints in evaluating risks to species. It is generally acknowledged that EPA's standard of protection for humans from carcinogenic effects is one-in-one-million people in the human population. It appears EPA's protection standard for endangered and threatened species is greater than its protection of humans because no one individual in an endangered or threatened species population can be affected.

EPA's methodology also estimates risk to endangered species using exaggerated estimates of the size and location of endangered and threatened species habitats and how these species are potentially exposed to pesticide applications. In many cases, the methodology also assumes that growers are using maximum labeled rates, the maximum number of applications and that 100 percent of the crop is treated. This methodology is designed to generate very conservative estimates of risk to endangered species, so it is no surprise that the methodology determines that a high percentage of threatened or endangered species are likely to be adversely affected by pesticide use. We urge EPA to modify its methodology to include more information on actual use and realistic scenarios for use. This would generate more realistic modeling results and

provide a more meaningful assessment of what measures should be taken to protect threatened or endangered species. We agree that endangered species should be protected, but they should be protected from real risk, not phantom risks generated from an unrealistic assessment.

We appreciate the opportunity to comment on the Agency's biological evaluation of imidacloprid and thiamethoxam and would be pleased to provide additional information that might help the Agency refine its analysis.

Sincerely,

James R. Cranney, Jr.
President
California Citrus Quality Council

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cc: CCQC Board of Directors