Case File Number: 083016-47-02

CLEMSON UNIVERSITY

NON-AGRICULTURAL FOLLOW-UP PESTICIDE USE INVESTIGATION

Dorchester County Public Works
2120 E. Main Street
Dorchester, SC 29437

Submitted by Ryan A. Okey, Pesticide Program Chief
Department of Pesticide Regulation (DPR)

29 September 2016

NATURE OF INCIDENT

The Department of Pesticide Regulation (DPR) was contacted by the Dorchester County Extension Office on 29 August 2016 regarding calls they received about a recent aerial application for mosquitoes and the impact it was having on beehives in the area. Additionally, Dr. Jennifer Tsuruda, Apiculture Specialist with Clemson University, forwarded DPR contact information for Ms. Nita Stanley, who alleged the aerial application had fatally affected her bees.

DEPARTMENTAL FINDINGS

DPR Investigator, Michael Russell, met with Nita Stanley, co-owner of Flowertown Bees, located at 503 Pinehurst Avenue, Summerville, SC at approximately 3:00 pm on 30 August 2016. Ms. Stanley stated that a firefighter at a neighboring fire station visited her property on August 29th to see how her bees were after the application. At that time, Ms. Stanley was unaware of the recent aerial application. When she inspected her bee yard, she observed dead bees around each hive.

After talking with Ms. Stanley, Investigator Russell walked down to the location of the hives. He noticed a large number of bees that were deceased on the ground below each hive. As he continued to walk around the hives, he observed bees with behaviors consistent with pesticide exposure, to include bees appearing lethargic on the outside of the hive and worker bees removing dead bees from the entrance of each hive. Investigator Russell also observed very active bees flying around the yard as well. A representative sample of dead and dying bees as well as soil were collected from around the hives by Investigator Russell in compliance with DPR's field sampling policy manual. An unofficial third-party sample of bees that were collected by Ms. Stanley were also obtained. All of the samples were transferred to DPR's Pesticide Residue Laboratory for a full analysis.

DPR met with Scott Gaskins, Ground Supervisor of Dorchester County Public Works, on September 1st and again on the 12th. Mr. Gaskins stated that in July 2016 Dorchester County engaged in talks to perform aerial applications for mosquito control. On July 21st, Dorchester agreed to a contract with Allen Aviation to perform aerial applications in Dorchester County. Mr. Gaskins received confirmed Zika travel related cases in Dorchester County from the South Carolina Department of Health and Environmental Control (DHEC) on consecutive weeks from August 9th through August 19th. Additionally, Mr. Gaskins received nuisance complaints of mosquitoes from the residents of Dorchester County as well as Summerville Elementary School. This information combined with the results of light traps and landing rate counts for mosquitoes, led Mr. Gaskins to create a zone to perform an aerial application for mosquito control. Mr. Gaskins stated that the zone was created to best encompass as many of the above factors as possible. The application zone was submitted to Allen Aviation with a tentative application date of August 27th. On August 26th, the Public Relations Department for Dorchester County published a public notice of the intended application. Mr. Gaskins stated that the tentative date of the application was pushed to August 28th to allow adequate notification. Mr. Gaskins provided DPR with pesticide application records for both the aerial application as well as ground applications performed within the identified zone.

DPR met with Mr. Al Allen, owner and Chief Pilot of Allen Aviation, on September 7th and again on the 15th. Mr. Allen stated that he performed an aerial application of Trumpet EC (EPA Reg. No. 5481-481, AMVAC) in Dorchester County on 28 August 2016. Mr. Allen was provided a map by Dorchester County designating the zone where the application was to be performed. The map included sensitive areas representing the approximate location of beehives, however no specific GPS coordinates were given. In the absence of GPS coordinates, Mr. Allen marks waypoints on the plane's guidance system for sensitive areas. Mr. Allen stated that during the application the spray is shut off approximately three seconds before reaching a sensitive area and turned back on approximately three seconds after passing the sensitive area. This represents an approximate linear distance of three quarters to one mile that the spray is turned off. In addition to pesticide application records, Mr. Allen also provided the most recent equipment calibration record. The records provided by Mr. Allen show that between the hours of 6:45 am and 7:50 am on August 28th he applied 58 gallons of Trumpet EC (EPA Reg. No. 5481-481, AMVAC) at a rate of 0.8 fluid ounces per acre.

DPR performed an in-depth and thorough review of the Trumpet EC (EPA Reg. No. 5481-481, AMVAC) label. The label of Trumpet EC directs that for aerial applications to control adult mosquitoes, the product is to be applied at a rate of 0.6 to 1.2 fluid ounces per acre. DPR also identified language in the *Environmental Hazards* section of this label that contributed to this investigation. The language DPR identified states *"To minimize hazard to bees, it is recommended that the product is not applied more than two hours after sunrise or two hours before sunset, limiting application to times when bees are least active. Do not apply this product or allow it to drift to blooming crops or weeds while bees are visiting the treatment area... except when applications are made to prevent or control a threat to public and/or animal health determined by a state agency on the basis of documented evidence of... the occurrence of mosquito-borne disease in animal or human*

populations..." DPR observed this section of the label as guidance for optimal times to minimize hazard and an exemption to restrictions normally placed on applications performed during the absence of a threat to public health. The National Weather service data states that sunrise occurred at 6:53 am August 28th and that the air temperature did not exceed 73.4°F during the application.

The Regulatory Affairs team with AMVAC Chemical Corporation provided the following statement regarding this section of the label, "The application times given on the label to minimize hazard to bees are recommendations only. This application timing is not directly related to, nor does it affect the enforceability of, the label restriction requiring the user to not apply the product to or allow it to drift to blooming crops or weeds while bees are foraging. The only scenario in which the latter restriction is not in effect is if the application in question is being made to control or prevent a public and/or animal health threat."

DHEC provided confirmation to DPR that travel related cases of Zika were identified in Dorchester County and the State Public Health Entomologist notified Dorchester County on August 9th and August 15th, and provided maps to the county showing a mosquito target zone. The information provided to Dorchester County did not specify the method of application or the type of pesticide to be applied in these zones. DHEC provided the following statement to DPR "The South Carolina Department of Health and Environmental Control confirms that certain mosquito borne diseases are a public health risk in South Carolina."

The representative sample of dead and dying bees, the soil collected from around the hives, and the unofficial third-party sample of bees collected by Ms. Stanley were analyzed by the DPR Pesticide Residue Laboratory. None of the samples yielded pesticide residue, or specifically Naled, which is the active ingredient in Trumpet EC. These results likely occurred due to the time which elapsed between the application and when the samples were obtained, combined with Naled's ability to rapidly degrade under typical environmental conditions. The official samples were obtained by DPR approximately 53 hours after the application was conducted.

Section 27-1084 (A)(4) of the Rules and Regulation for the Enforcement of the South Carolina Pesticide Control Act states "For non-commercial applicators only, or for commercial applicators making applications for and under the direct supervision of a governmental entity, the disclosure requirements of the above Sections may be met by announcement or publication of the nature and timing of pesticide applications in the appropriate mass media outlets not less than 24 hours prior to the application." The Public Relations Department for Dorchester County published a public notice in The Summerville Journal Scene on August 26th that included the nature, timing, and location of the intended application.

CONCLUSION

This investigation found no violations occurred as result of the Trumpet EC application performed on August 28th. This conclusion was supported by the following statements: the nature

and timing of the pesticide application was published in a mass media outlet greater than 24 hours prior to the application, the application was performed at or below the labeled rate, the application was not applied more than 2 hours after sunrise, and the application was performed to prevent a threat to public health after identifying the occurrence of a mosquito-borne disease in the human population. This conclusion does not, in anyway, eliminate the Trumpet EC application as a cause for the loss of bees following the application.

SUBMITTED BY Ryan A. Okey

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File

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