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12 SUPERIOR COURT OF CALIFORNIA

13 COUNTY OF SANTA CRUZ

<p>14 COUNTY OF SANTA CRUZ</p> <p>15 Plaintiff/Petitioner,</p> <p>16 v.</p> <p>17 CALIFORNIA DEPARTMENT OF FOOD 18 AND AGRICULTURE; A.G. KAWAMURA, in 19 his official capacity as Secretary of the 20 California Department of Food and Agriculture; 21 and DOES 1 through 100, inclusive,</p> <p>22 Defendants/Respondents.</p>	<p>23 Case No. 158516</p> <p>24 DECLARATION OF DANIEL 25 HARDER IN SUPPORT OF EX 26 PARTE APPLICATION FOR 27 TEMPORARY RESTRAINING 28 ORDER</p> <p>Date: October 31, 2007 Time: 1:00 p.m. Dept: 8</p>
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29 I, Daniel Harder, hereby declare:

30 1. I am a resident of Boony Doon, Santa Cruz County. I have a doctoral degree in
31 Botany from U.C. Berkeley and I am currently employed as the Executive Director of the Arboretum
32 at University of California, Santa Cruz. My duties in this position include maintaining the valuable
33 and diverse collection of plants at the Arboretum and conducting research and education programs
34 concerning plant science issues. I am also a member of the Santa Cruz Nursery Light Brown Apple
35 Moth (“LBAM”) Task Force. My academic and professional training and experiences have taught
36 me how to research, locate, and analyze data on botanical and associated biological issues, including

1 the use of pesticides to control invasive pests that threaten plants. Through my experiences
2 personally and professionally, I have gathered information about Australia's, New Zealand's and
3 Hawaii's experience with LBAM and I have had discussions with colleagues from those
4 jurisdictions about this insect pest. I have personal knowledge of the facts set forth below, and if
5 called upon to testify thereto I could and would do so competently.

6 2. The residents of Santa Cruz County have been informed by the California Department
7 of Food and Agriculture ("CDFA") that they will be aerially sprayed with the pesticide Checkmate
8 beginning November 4, 2007, in an effort to eradicate the Light Brown Apple Moth ("LBAM").

9 3. There has been no reported, quantifiable damage done by the LBAM in Santa Cruz
10 County. Other areas of the globe, such as New Zealand and Hawaii (even after more than 100 years
11 of observations) consider LBAM a minor pest; in areas like New Zealand, the only real threat
12 LBAM presents is the imposition caused by export regulations for products like apples. Based on
13 my experiences and on the information I have gathered to date, I do not believe that there is any
14 emergency in Santa Cruz County warranting the planned aerial spray of Checkmate.

15 4. The information I have gathered and my professional training and experience
16 indicates that the LBAM will not be breeding in the winter months beginning in November, as the
17 rains begin and the temperature drops. Instead, throughout November and most of the winter
18 months the moths will remain as caterpillars and not become adults. When the weather warms in
19 spring and summer, the caterpillars continue their development to adult moths.

20 5. As compared to the spring and summer, few crops and produce leave this area in the
21 winter months, further reducing the chance that moths will be exported from Santa Cruz County
22 between now and spring 2008. Moreover, since the confirmed discovery of LBAM in Alameda
23 County, nurseries have been under quarantine in all counties where LBAM has been found
24 (including Santa Cruz County) to contain and limit the distribution of the insect through the
25 transportation of agricultural products. This further reduces the chance that moths are leaving this
26 County or that failing to aerial spray this winter will lead to a spread of the LBAM.

27 6. The purpose of pheromones is to disrupt the mating cycle of the LBAM; by definition
28 pheromones are not intended to kill any target insect. Pheromones are intended only to control

1 populations of pests and are not able to eradicate them. The information I have reviewed thus far
2 indicates that mating disrupting pheromones have never been shown to completely eliminate any
3 insect pest anywhere in the world, moth or otherwise. The protocol of aerial spraying pheromones
4 over urban populations is without precedent and is experimental in its application.

5 7. Within areas off-limits to spraying (such as over open water, in the terrestrial buffer
6 zones of the Monterey Bay National Marine Sanctuary, etc.) populations of the moth will remain
7 viable and intact before, during, and after the aerial spraying. To the extent LBAM breeds over the
8 winter at all, these populations will be able to effectively re-infect treated areas.

9 8. As there are no known studies or reports on the effectiveness of using pheromones as
10 an eradication tool as CDFA intends to use them here, there should be no expectation that the
11 proposed aerial spraying will be effective. There is no basis to conclude that, when CDFA finishes
12 spraying the County three years from now, LBAM will not exist in this County. The sooner this
13 effort is moved from eradication to one of control, studies can be completed, an exhaustive
14 environmental review can be carried out, and targeted efforts to meet export requirements can be
15 effectively met. Under the protocol being utilized now, spraying will take place before any of these
16 important steps can be accomplished.

17 9. No testing of the aerial spraying protocol or of Checkmate itself have been done and
18 no peer-reviewed literature is available to understand the long-term health effects of aerial spraying
19 this substance over parks, schools, and backyards. In New Zealand and Australia, aerially applied
20 pheromones to control LBAM have been mostly restricted to agricultural areas and these substances
21 have not been used or tested extensively over human populations or over natural areas. Because the
22 only testing of the aerially applied pheromone is the spraying in Monterey County, close scrutiny of
23 the results from the Monterey County spraying efforts are immediately important and instructive.

24 10. There are options to aerial spraying that have not been fully considered. Sticky board
25 traps and twist-ties are some of the better alternatives presented so far. However, under CDFA's
26 current protocol, environmental reviews will be delayed, no controls are being established to
27 determine the effectiveness of the sticky board traps and twist-ties currently out there, and effective
28 monitoring is not designed into the project (sticky board traps and pheromone lures become

1 ineffective once the pheromone is applied aerially so quantitative estimation of the pheromone's
2 effectiveness is eliminated – or worse yet, success is proclaimed because the traps are no longer
3 luring the insect).

4 11. Aerial spraying over urban areas includes over rooftops and on streets. This will
5 allow the pheromone to become concentrated in drainpipes and along street drainage ways resulting
6 in unknown and untested consequences. In a meeting with growers in Watsonville, even Suterra (the
7 manufacturer of Checkmate) commented and cautioned against the use of the pheromone on
8 irrigated crops to avoid such concentrating of the pheromone in runoff.

9 12. My review and personal observation indicates that the pheromone formulation used to
10 monitor LBAM also lures other species of Tortricidae (leaf rolling) moths. Santa Cruz County has
11 more than 30 species of Tortricid moth (the taxonomy of this group of insects is still unclear as to the
12 total number of species in the county). Using mating disruptive pheromones may affect not only
13 LBAM, but an untold number of other native species. Again, the point is that it is impossible to
14 know without further testing. Without careful monitoring and controls these native populations may
15 be adversely affected by the spraying without notice or recording.

16 13. With a large number of Tortricid moth species in the county, there are certainly a
17 number of natural predators to these insects that may be useful in naturally controlling LBAM.
18 Natural, native controls have not been investigated and, under the current protocol, it does not appear
19 that CDFG has any plans to do so.

20 14. Based on my education, experience, and the research that I have conducted on this
21 issue, I do not believe that aerial spraying of the Checkmate pesticide is warranted, I do not believe
22 that it will be effective in controlling or eradicating LBAM, and I do not believe that enough testing
23 and research has been done on aerial spraying of Checkmate to ensure that the pesticide is safe for
24 humans and the environment in the manner in which CDFG intends to use it.

25 I declare under penalty of perjury under the laws of the State of California the foregoing is
26 true and correct and that this Declaration was executed on this ____ day of October 2007 at Santa
27 Cruz, California.

28 _____
DANIEL HARDER, Ph.D