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SUPERIOR COURT OF CALIFORNIA

COUNTY OF SANTA CRUZ

COUNTY OF SANTA CRUZ

Case No. **CV 158516**

Plaintiff/Petitioner,

v.

**PETITION FOR WRIT OF MANDATE
AND COMPLAINT FOR
DECLARATORY AND INJUNCTIVE
RELIEF**

CALIFORNIA DEPARTMENT OF FOOD
AND AGRICULTURE; A.G. KAWAMURA, in
his official capacity as Secretary of the
California Department of Food and Agriculture;
and DOES 1 through 100, inclusive,

Defendants/Respondents.

Plaintiff and Petitioner County of Santa Cruz ("the County") alleges as follows:

1. This case concerns the announced intention of Defendant and Respondent California Department of Food and Agriculture ("CDFA") to aerial spray large portions of Santa Cruz County with a pesticide designed to address the Light Brown Apple Moth ("LBAM"). The pesticide CDFA intends to spray – Checkmate LBAM-F ("Checkmate") – is a blend of LBAM pheromones and chemicals designed to deliver the pheromones to the atmosphere. This pesticide is allegedly designed to confuse male moths, prevent them from finding female moths, and thus interrupt the LBAM's breeding cycle. Under order of the Governor's Office, CDFA has disclosed

1 the chemical ingredients that compose Checkmate; however CDFA has refused to disclose the
2 concentration of the chemicals such that the Santa Cruz County community can intelligently
3 evaluate the risks of aerial spraying of Checkmate on health, safety and the environment.

4 2. There have been no scientific studies to determine whether aerial spraying of
5 Checkmate is safe for humans or animals and there is no emergency requiring that this pesticide be
6 aerielly sprayed before further testing and research is done to assess its safety. Recently, CDFA
7 began aerielly spraying Checkmate OLR-F and LBAM-F in Monterey County. Numerous citizens
8 have complained of adverse health effects that they trace directly to the spraying. With this
9 lawsuit, the County seeks a court order requiring CDFA to refrain from aerial spraying Checkmate
10 in Santa Cruz County.

11 **ALLEGATIONS CONCERNING THE PARTIES**

12 3. Plaintiff and Petitioner County of Santa Cruz is a political subdivision of the State
13 of California.

14 4. Defendant and Respondent CDFA is an agency of the State of California responsible
15 for, among other things, regulating the destruction of insects that are harmful to California's
16 economy.

17 5. Defendant and Respondent A.G. Kawamura is the Secretary of CDFA and is
18 generally responsible for administering CDFA in accordance with State and Federal laws. Secretary
19 Kawamura is being sued in his official capacity only. All references in this complaint to CDFA
20 include Secretary Kawamura.

21 6. The true names and capacities of the defendants and respondents named herein as
22 Does 1 through 100, inclusive, are unknown to the County, who therefore sues said defendants and
23 respondents by such fictitious names. The County will amend this Complaint/Petition to show
24 their true names and capacities when ascertained.

25 **JURISDICTION AND VENUE**

26 7. This Court has jurisdiction over this action pursuant to Sections 187, 526, 1085, and
27 1094.5 of the California Code of Civil Procedure. The relief requested is authorized under Civil
28

1 Code section 3420, *et seq.* (preventative relief) and Code of Civil Procedure section 525, *et seq.*
2 (injunctive relief).

3 8. Venue for this action properly lies in this Court pursuant to California Code of Civil
4 Procedure section 393 and Government Code section 955.3.

5 **GENERAL ALLEGATIONS COMMON TO ALL CAUSES OF ACTION**

6 9. On or about September 21, 2007 CDFA disclosed that it intends to aerial spray
7 Checkmate on a large area in the County starting November 4, 2007. The approval of the spraying
8 was accompanied by a finding by CDFA that this project was exempt from the California
9 Environmental Quality Act ("CEQA"), Public Resources Code section 21000, *et seq.*, because the
10 project was in response to an emergency pursuant to Public Resources Code section 21080(b) and
11 was exempt under a "categorical exemption" for actions taken to help the environment.

12 10. CDFA's use of emergency and categorical exemptions to evade the requirements of
13 CEQA is arbitrary, capricious, and contrary to law. There is no emergency, and the County is
14 informed and believes that CDFA's mass aerial spraying of this pesticide will not help the
15 environment. Given the season, the current quarantine, and the fact that few agricultural products
16 are transported from this County after November 1, the County is informed and believes that
17 LBAMs will neither breed nor be transported out of the County in sufficient numbers to justify the
18 spraying in November. The use of this product is experimental and is not expected to eradicate the
19 LBAM in this County. Moreover, no quantifiable damage to crops in this County has been
20 attributed to the LBAM. Reasonable alternatives to the contemplated spraying have been identified
21 but are being ignored or dismissed by CDFA.

22 11. The County is informed and believes that Checkmate may be harmful to humans
23 when applied aurally, and contend that at the very least it is an open question at this point as this
24 type of spraying has never been done in an urban setting before last month in Monterey County and
25 insufficient testing has been completed to determine whether the chemicals in Checkmate, either
26 individually or in conjunction with one another, cause injury to humans or the environment. Many
27 people in Monterey County have reported suffering adverse health effects after the recent spraying
28 there, such as respiratory illness, congestion, eye, ear, nose and throat irritation, headaches, muscle

1 fatigue, dizziness, itching skin, rashes, and nausea. Moreover, the County is informed and believes
2 that the spraying may have a significant adverse effect on the environment, because these chemicals
3 have known side effects and are being delivered aerially in a manner that has been untested in this
4 environment.

5 FIRST CAUSE OF ACTION

6 [Trespass]

7 12. The previous paragraphs of this Complaint are incorporated herein by reference.

8 13. The County owns and controls substantial properties where it employs a sizeable
9 work force, confines jail detainees entrusted to its care, treats patients, and provides services for its
10 citizenry. CDFA intends to aerially spray the County's property with Checkmate. CDFA does not
11 have the consent of the County to apply this pesticide on its property. Moreover, the County
12 employs persons in a public safety capacity (peace officers, firefighters, public works employees)
13 that will be required to be patrolling and working throughout the County when this spraying occurs.
14 In addition, the County is inhabited by homeless persons who sleep in County parks and on public
15 property and will be unable to avoid being sprayed on by escaping indoors. Plaintiff is informed and
16 believes that its employees and citizens will be negatively impacted and may be physically or
17 psychologically harmed if they come into contact with the Checkmate pesticide and that the
18 pesticide will be a substantial factor in causing that harm.

19 WHEREFORE, the County prays for judgment as set forth below.

20 SECOND CAUSE OF ACTION

21 [Nuisance]

22 14. The previous paragraphs of this Complaint are incorporated herein by reference.

23 15. By aerially spraying the Checkmate pesticide over property owned and controlled by
24 the County, the County is informed and believes that CDFA will create a condition that is harmful to
25 the health of the County's employees and citizens and will create a condition that is indecent and
26 offensive to the senses of those individuals. CDFA's conduct will act as an interference with the
27 County's comfortable use of its property and that of its citizenry and the County does not consent to
28 CDFA's conduct in aerially spraying the pesticide over these properties. Ordinary persons would be

1 reasonably annoyed or disturbed by CDFA's conduct and the County is informed and believes that
2 its employees and citizens will be harmed both physically and psychologically by CDFA's spraying
3 regimen. The County asserts that the seriousness of the harm caused to these individuals outweighs
4 the public benefit of CDFA's aerial spraying, and that the spraying of this pesticide is a substantial
5 and unreasonable interference with the County's employees and citizenry's use and enjoyment of the
6 County's, and their own, property.

7 WHEREFORE, the County prays for judgment as set forth below.

8 **THIRD CAUSE OF ACTION**

9 **[Writ of Mandate -- Violation of CEQA -- Code Civ. Proc., §1085]**

10 16. The previous paragraphs of this Complaint are incorporated herein by reference.

11 17. The California Environmental Quality Act ("CEQA"), Public Resources Code section
12 21000, *et seq.*, requires that all projects that may have an effect on the environment be rigorously
13 analyzed to ensure that feasible alternatives and feasible mitigation measures have been adequately
14 considered and utilized to the extent possible to lessen the project's impact on the environment.
15 Projects carried out by public agencies are subject to the same level of review and consideration as
16 private projects. (Pub. Resources Code, § 21001.1.) CEQA requires that if there is substantial
17 evidence that a project may have a significant impact on the environment, unless an applicable
18 exemption applies, the lead agency in charge of approving a project must prepare an Environmental
19 Impact Report ("EIR") to analyze the environmental issues and provide a basis for public discussion
20 and information concerning the environmental consequences of a relevant project. (Pub. Resources
21 Code, §§ 21061; 21080(d).)

22 18. On October 3, 2007, without any publicly noticed hearings, CDFA filed a Notice of
23 Exemption notifying the State Office of Planning and Research that it intended to embark on a
24 project of aerial pesticide spraying in Santa Cruz County to eradicate the LBAM. The Notice of
25 Exemption alleged that the project was exempt from the requirements of CEQA as an "Emergency
26 Project" under Public Resources Code section 21080(b)(4) and CEQA Guideline Article 18, section
27 15269(a). The Notice of Exemption also alleged that the project was exempt from the requirements
28 of CEQA under a "Categorical Exemption" per CEQA Guideline Article 19, section 15308 (class 8).

1 19. The Notice of Exemption is void and unlawful because the project is not addressing
2 an "emergency," nor is it "categorically exempt" from CEQA as a matter of law. CDFA's failure to
3 comply with CEQA by certifying an EIR prior to approving the aerial spraying of Checkmate over
4 the County was arbitrary, capricious, and contrary to law in that there is no true emergency and the
5 aerial spraying is not going to protect the environment.

6 20. CDFA has a clear and present duty to abide by the statutory requirements of CEQA
7 and the County has a clear, present, and beneficial right to the performance of that duty. The County
8 has no plain, speedy and adequate remedy at law and will suffer irreparable harm unless this Court
9 exercises its equitable and mandatory powers by requiring CDFA to comply with its statutory duties
10 by issuing a Peremptory Writ of Mandate compelling CDFA to comply with CEQA, including but
11 not limited to certifying an EIR regarding this project, prior to engaging in an aerial spray campaign
12 over Santa Cruz County.

13 WHEREFORE, the County prays for judgment as set forth below.

14 **FOURTH CAUSE OF ACTION**

15 **[Declaratory Relief]**

16 21. The previous paragraphs of this complaint are incorporated herein by reference.

17 22. An actual controversy has arisen and now exists between plaintiff and petitioner
18 County of Santa Cruz on the one hand, and defendant and respondent CDFA on the other,
19 concerning their respective rights and duties in that the County contends that CDFA has illegally
20 failed to comply with CEQA, has not properly determined that the aerial spraying of Checkmate is
21 exempt from CEQA, has not properly determined that Checkmate is safe for humans and animals
22 when delivered to the environment aerially, and is not permitted under law to assault the residents of
23 the County with an untested pesticide and create a trespass and nuisance that will have deleterious
24 consequences to the health and welfare of the people living in this community. CDFA contends that
25 it is exempt from complying with CEQA and that it is legally authorized to aerially spray Checkmate
26 over the County.

27 23. The County requests a judicial determination of its rights and a declaration that
28 CDFA is not permitted to aerially spray Checkmate over the County.

1 24. A judicial declaration is necessary and appropriate at this time under the
2 circumstances in order that the County may ascertain its rights with regard to the intended aerial
3 spraying.

4 WHEREFORE, plaintiff and petitioner County of Santa Cruz prays for a judgment against
5 defendants and respondents CDFA and A.G. Kawamura, and each of them, as follows:

6 1. For Alternative and Peremptory Writs of Mandate to compel CDFA and A.G.
7 Kawamura to withdraw the Notice of Exemption and set aside their approval of the aerial spraying
8 of Santa Cruz County unless and until they have certified an EIR in compliance with CEQA and
9 further testing is conducted to ensure that this pesticide is safe for humans and the environment;

10 2. For temporary, preliminary and permanent injunctive relief to prohibit CDFA and
11 A.G. Kawamura from aerial spraying the pesticide Checkmate in Santa Cruz County unless and
12 until they have certified an EIR in compliance with CEQA and further testing is conducted to
13 ensure that this pesticide is safe for humans and the environment;

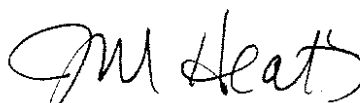
14 3. For costs of suit, including reasonable attorneys fees incurred in this action under
15 Code of Civil Procedure section 1021.5; and

16 4. For such other and further relief as the court deems proper.

17
18 Dated: October 30, 2007

DANA McRAE, COUNTY COUNSEL

19
20
21 By



JASON M. HEATH

Assistant County Counsel

**Attorneys for Plaintiff and Petitioner
COUNTY OF SANTA CRUZ**

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7 **Attorneys for Plaintiff/Petitioner County of Santa Cruz**

8
9 SUPERIOR COURT OF CALIFORNIA

10 COUNTY OF SANTA CRUZ

12 COUNTY OF SANTA CRUZ	Case No. 158516
13 Plaintiff/Petitioner,	MEMORANDUM OF POINTS AND
14 v.	AUTHORITIES IN SUPPORT OF EX
15 CALIFORNIA DEPARTMENT OF FOOD	PARTE APPLICATION FOR
16 AND AGRICULTURE; A.G. KAWAMURA, in	TEMPORARY RESTRAINING
17 his official capacity as Secretary of the	ORDER AND ORDER TO SHOW
18 California Department of Food and Agriculture;	CAUSE RE: PRELIMINARY
19 and DOES 1 through 100, inclusive,	INJUNCTIVE RELIEF
20 Defendants/Respondents.	Date: October 31, 2007
	Time: 1:00 p.m.
	Dept: 8

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INTRODUCTION

Plaintiff County of Santa Cruz ("the County") seeks a Temporary Restraining Order ("TRO") to prevent defendant California Department of Food and Agriculture ("CDFA") from aerial spraying Santa Cruz County with the pesticide Checkmate, beginning this Sunday night. This pesticide – which is designed to control or eradicate the Light Brown Apple Moth ("LBAM") – is a mixture of chemicals that has not been adequately tested or studied to determine its effects on humans or the environment when sprayed over an urban area. CDFA concedes that prior to last month in Monterey, Checkmate has never been aerially sprayed over homes, backyards, parks, and schools. CDFA has not conducted any environmental review of this project on the asserted grounds that an emergency exists; in reality, there is no emergency and CDFA is not entitled to evade the requirements of the California Environmental Quality Act ("CEQA"). Moreover, citizens of Monterey County have attributed health problems to this spraying.

In support of its request for a TRO, the County presents the declarations of qualified experts who state that no independent studies have been done to determine whether this pesticide is safe for humans or the environment as it will be applied, there is insufficient knowledge of how it is going to impact humans and the environment, and there is no need to aerially spray in November because there is no true emergency and the effectiveness in eradicating the LBAM will be limited. Accordingly, the County requests that this Court stop CDFA from aerial spraying the County until adequate third-party testing has been done to confirm the safety of this pesticide as applied and until CDFA has certified an Environmental Impact Report ("EIR") assessing feasible alternatives and appropriate mitigation measures.

STATEMENT OF FACTS

On or about September 21, 2007 CDFA disclosed that it intends to aerial spray Checkmate on a large area in the County starting on November 4, 2007. (Declaration of Jason M. Heath ("Heath Decl."), ¶ 2.) On October 3, 2007, without any noticed public hearings, CDFA filed a Notice of Exemption ("NOE") from CEQA notifying the State Office of Planning and Research that it intended to embark on a project of aerial pesticide spraying in "the cities of Capitola, Santa Cruz and Scotts Valley as well as in the communities of Aptos, Felton, Live Oak, Opal Cliffs, Rio del

1 Mar, Soquel and Twin Oaks” to eradicate the LBAM. (Heath Decl., ¶ 2, Exh. A.) CDFA’s NOE
2 states:

3 “The project will consist of the following: Aerial applications with a
4 synthetic insect pheromone will be applied throughout the eradication
5 area. The pheromone confuses the male moths, impairing their ability
6 to find mates. Once the breeding cycle of the moth is broken, the light
7 brown apple moth population is reduced and ultimately eradicated
8 from the area. For monitoring, traps baited with the LBAM
9 pheromone will be placed in the eradication area at the density of five
10 traps per square mile. Additional traps may be added to further delimit
11 the infestation and to determine the efficacy of treatments. All
12 monitoring traps will be serviced on a regular schedule for a period of
13 time equal to three generations beyond the date of the last LBAM
14 detection. The project will benefit the community and agriculture
15 producers in the area.”

16 (Heath Decl., Exh. A.)

17 The NOE alleged that the project was statutorily exempt from the requirements of CEQA as
18 an “Emergency Project” under Public Resources Code section 21080(b)(4) and CEQA Guideline
19 Article 18, section 15269(a). The NOE also alleged that the project was exempt from the
20 requirements of CEQA under a “Categorical Exemption” per CEQA Guideline Article 19, section
21 15308 (class 8). (Heath Decl., ¶ 2, Exh. A.)

22 CDFA’s website contains a document entitled “Light Brown Apple Moth (LBAM) Questions
23 and Answers.” (Heath Decl., ¶ 3, Exh. B.) This document purports to summarize the available
24 information concerning the aerial application of pheromone substances. It states that the LBAM is
25 “a recent arrival in California” and that the populations of LBAM “are still relatively small and are
26 considered by an international panel of expert scientists to be eradicable if significant action is taken
27 promptly.” (Heath Decl., Exh. B, p. 3.) The document also states that the pheromone treatments are
28 a central part of a “multi-year project that will require multiple tools to be successful” and that
CDFA has “already contained the infestation by imposing quarantine restrictions and inspections on
plant and crop shipments, and . . . [has] suppressed the infestation by pheromone twist-ties in
several locations around the fringes of the infested areas.” (Heath Decl., Exh. B, p. 8.)

1 On September 9, 10, 11, and 12, CDFA aerial sprayed Monterey County with Checkmate
2 OLR-F. Many people in that County have reported adverse health reactions after the spraying.

3 These complaints include:

- 4 ■ an 11 month-old with no previous adverse health symptoms taken to the
5 hospital on September 11 due to labored breathing, congestion, and loss of
6 appetite, and diagnosed with Reactive Airway Disease (Decl. of Timothy
7 Wilcox, Del Ray Oaks);
- 8 ■ a man suffers from severe chest and sinus congestion and shallow breathing
9 on September 12 (Decl. of Brook Sebok);
- 10 ■ a thirteen year old and her father experience intense vomiting after the
11 spraying, and a woman and her daughter experience dry stinging in their
12 eyes after the spraying (Decl. of Katherine Koviak);
- 13 ■ a man had severe trouble breathing and developed an intense chest cold
14 after the spraying occurred, his daughter developed red and irritated eyes
15 after playing on the grass after the spraying, and his wife developed a sore
16 throat (Decl. of Kristy Sebok, Pacific Grove);
- 17 ■ a man suffers breathing problems and feels a burning sensation and has
18 interacted with others in his community with breathing difficulties
19 (Testimony of Barton Bruno [Heath Decl., Exh. C, p. 28]);
- 20 ■ a man develops chest pains, sore throat, and irritated tongue that he
21 attributes to the spraying (Testimony of Steven Brunner [Heath Decl., Exh.
22 C, p. 30-31]);
- 23 ■ a man had sore throat symptoms after the spraying; he visited his doctor
24 and was diagnosed with pharyngeal irritation and otis external, which are
25 reportedly symptoms consistent with irritation caused from aerial spraying
26 (Decl. of Gordon Smith, Monterey).¹

27
28 ¹ The County is currently in the midst of collecting additional declarations and expects to submit additional declarations to the Court as they are received.

1 On October 16, 2007, defendant/respondent CDFA Secretary A.G. Kawamura and his staff
2 appeared before the Santa Cruz County Board of Supervisors ("the Board") to present their plans to
3 spray Santa Cruz County with Checkmate starting November 4th (a true and correct uncertified copy
4 of the recorded transcript of the Board's hearing is attached to the Heath Declaration as Exhibit C.)
5 At the meeting, CDFA conceded that prior to the Monterey County spraying, aerial spraying of
6 Checkmate had never before been done over an urban population. (Heath Decl., Exh. C, p. 42; 52-
7 53.) CDFA staff's responses to the Board's questions about the safety of this pesticide were
8 extremely lacking. (Heath Decl., Exh. C, pp. 38-39; 44; 46, 57.) Many members of the public
9 testified at the hearing in protest to the intended spraying, as did two citizens from Monterey County
10 who personally experienced adverse health effects after the spraying. (Heath Decl., Exh. C, pp. 17-
11 38.)

12 On October 26, 2007, CDFA requested that Santa Cruz County Agricultural Commissioner
13 Ken Corbishley issue a restricted materials permit to allow spraying to commence on November 4,
14 2007. (Heath Decl., Exh. D.) According to the application, CDFA intends to treat Santa Cruz
15 County from November 4 to November 9, between the hours of 8:00 p.m. and 5:00 a.m., weather
16 permitting. (*Id.*) Contrary to its representations to the community that it intends to spray Santa Cruz
17 County with only Checkmate LBAM-F, CDFA has applied to use *both* Checkmate LBAM-F and
18 Checkmate OLR-F in this round of spraying. (*Id.*, p. 2; Heath Decl., Exh. C, p. 7-8 [CDFA Division
19 Director John Connell's comments].)

20 With this memorandum, the County has submitted expert opinion evidence supporting its
21 position that aerial spraying should not go forward absent third-party testing and in the absence of a
22 certified EIR. Dr. Richard Philp, a long-time professor of Pharmacology and Toxicology, attests that
23 no chronic toxicity study of Checkmate has been conducted, that the statements of the USDA and
24 EPA are filled with contradictory statements regarding the toxicity of pheromones, and that this
25 product should not be aerially sprayed as intended at this time. (Declaration of Dr. Richard Philp
26 ("Philp Decl."), ¶¶ 3-8 .) Dr. Daniel Harder, a botanist and the Executive Director of the U.C. Santa
27 Cruz Arboretum, attests that there has been no reported, quantifiable damage done by the LBAM in
28 Santa Cruz County, aerial spraying for this moth is not necessary in November because it will have

1 little effect on controlling the LBAM population, much less eradicating it, and that not enough
2 testing has been done to ensure that Checkmate is safe for humans or the environment in the manner
3 in which CDFA intends to use it. (Declaration of Dr. Daniel Harder ("Harder Decl."), ¶¶ 3-15.)

4 In short, no studies have been done to determine whether this pesticide is safe for CDFA to
5 spray over schools, parks, and backyards, there is insufficient knowledge of how it is going to
6 impact humans and the environment, the efficacy of the intended treatment is limited at this time of
7 year, and more research needs to be done before Checkmate is aerially sprayed over this community.
8 People that have already been sprayed in Monterey County believe that this pesticide is hurting
9 them. The County respectfully asks that the Court stop this spraying.

10 III.

11 **THE LEGAL STANDARD FOR ISSUING A TEMPORARY RESTRAINING ORDER**

12 Under California Code of Civil Procedure section 526, an injunction may be granted in any
13 of the following cases:

- 14 ■ When it appears by the complaint that the plaintiff is entitled to the relief
15 demanded, and the relief consists of restraining the commission of the act
16 complained of, either for a limited period or perpetually;
- 17 ■ When it appears by the complaint or affidavits that the commission of some
18 act during the litigation would produce great or irreparable injury to a party
19 in the action;
- 20 ■ When it appears that, during the litigation, a party threatens or is about to
21 do some act in violation of the rights of another party respecting the subject
22 of the action, and tending to render the judgment ineffectual; or
- 23 ■ When pecuniary compensation would not afford adequate relief or it would
24 be very difficult to ascertain the amount of compensation that would afford
25 adequate relief.

26 (Cal. Code of Civ. Proc., § 526(a)(1-5).)

27 The legal standard governing the issuance of preliminary injunctive relief is guided by two
28 factors. The first is the "likelihood that the plaintiff will prevail on the merits at trial." The second

1 is "the interim harm that the plaintiff is likely to sustain if the injunction were denied as compared to
2 the harm that the defendant is likely to suffer if the preliminary injunction were issued." (*IT*
3 *Corporation v. County of Imperial* (1983) 35 Cal.3d 63, 69-70.)

4 With regard to the first factor, the County is not required to show that it will necessarily
5 prevail on the merits; instead, only a reasonable probability of success is required. (*Baypoint*
6 *Mortgage Corporation v. Crest Premium Real Estate Investments Retirement Trust* (1985) 168
7 Cal.App.3d 818, 824.) The trial court's determination "must be guided by a "mix" of the potential-
8 merit and interim harm factors; the greater the plaintiff's showing on one, the less must be shown on
9 the other to support an injunction." (*Butt v. State of California* (1992) 4 Cal.4th 668, 677-678.)²

10 IV.

11 **THE COUNTY HAS SATISFIED THE BURDEN NECESSARY TO OBTAIN A**
12 **TEMPORARY RESTRAINING ORDER**

13 Here, the County has satisfied the burden necessary to obtain a temporary restraining order.
14 CDFA has not complied with CEQA and has no valid basis for failing to do so. Moreover, CDFA's
15 intended spraying will act as both a trespass and a nuisance and numerous people are claiming that
16 they are suffering adverse health effects from the aerial spraying that occurred in Monterey County.
17 In short, the County has demonstrated a probability of success on the merits and that the harm the
18 County is likely to suffer absent issuance of a temporary restraining order is greater than that CDFA
19 will suffer if a temporary restraining order is granted.

20 ///

21 ///

22 ///

23 ///

24
25 ² CDFA will likely cite to *Tahoe Keys Property Owners' Association v. State Water Resources*
26 *Control Board* (1994) 23 Cal.App.4th 1459, 1471 for the proposition that a higher standard should
27 be applied when a public agency's actions are to be enjoined by the Court. However, the dispute in
28 *Tahoe Keys* involved an injunction seeking to prohibit collection of additional per lot mitigation fees
relating to construction permits paid to the public agencies. The dispute involved payment of money
and not the dire public health and safety concerns at issue here. In any event, the County believes
that it has fully met the *Tahoe Keys* standard.

1 **A. The County Has Demonstrated A Probability Of Success On The Merits**

2 The County is suing CDFA for violation of CEQA, trespass, nuisance, and declaratory
3 relief.³ As to these claims, the County has demonstrated a probability of success.

4 **1. CDFA Is Violating CEQA**

5 CDFA's NOE states that this aerial spraying project is exempt from CEQA because it is in
6 response to an "emergency" and because it is an action for "protection of the environment." Neither
7 of these exemptions apply in this case, and consequently CDFA is violating CEQA by pushing
8 forward with this project without first certifying an EIR.

9 CEQA requires that all projects that may have an effect on the environment be rigorously
10 analyzed to ensure that feasible alternatives and feasible mitigation measures have been adequately
11 considered and utilized to the extent possible to lessen the project's environmental impact. Projects
12 carried out by public agencies are subject to the same level of review and consideration as private
13 projects. (Pub. Resources Code, § 21001.1.) Under CEQA, if there is substantial evidence that a
14 project may have a significant impact on the environment, unless an applicable exemption applies
15 the lead agency in charge of approving a project must prepare an Environmental Impact Report
16 ("EIR") to analyze the environmental issues and provide a basis for public discussion and
17 information concerning the environmental consequences of a relevant project. (Pub. Resources
18 Code, §§ 21061; 21080(d).)

19 **a. The Emergency Exemption Does Not Apply To This Project**

20 Under CEQA, an "emergency" is

21 "[A] sudden, unexpected occurrence, involving a clear and imminent
22 danger, demanding immediate action to prevent or mitigate loss of, or
23 damage to, life, property, or essential public services. 'Emergency'
24 includes such occurrences as fire, flood, earthquake, or other soil or
geologic movements, as well as such occurrences as riot, accident, or
sabotage."

25 (Public Resources Code, § 21060.3.) The CEQA Guidelines add that this exemption "does not
26 include long-term projects undertaken for the purpose of preventing or mitigating a situation that has
27

28 ³ A true and correct copy of the County's complaint in this case is attached to the Heath Declaration
as Exhibit M.

1 a low probability of occurrence in the short-term.” (CEQA Guidelines, Cal. Code of Regs., Title 15,
2 § 15269(c).)

3 In *Western Municipal Water District v Superior Court* (1986) 187 Cal.App.3d 1104, the
4 court analyzed the emergency exemption in section 21080(b)(4). Although the following quote is
5 lengthy, it is absolutely on point here:

6 “The ‘emergency’ exemption of section 21080, subdivision (b)(4) is
7 obviously extremely narrow. ‘Emergency’ as defined by section
8 21060.3 is explicit and detailed. We particularly note that the
9 definition limits an emergency to an ‘*occurrence*,’ not a condition, and
10 that the occurrence must involve a ‘*clear and imminent danger,*
11 *demanding immediate action.*’ . .

12 The theory behind these exemptions is that if a project arises for which
13 the lead agency simply cannot complete the requisite paperwork
14 within the time constraints of CEQA, then pursuing the project without
15 complying with the EIR requirements is justifiable. For example, if a
16 dam is ready to burst or a fire is raging out of control and human life is
17 threatened as a result of delaying a project decision, application of the
18 emergency exemption would be proper. . . .

19 Although SBVMWD urges that ‘CEQA, including its environmental
20 impact report requirements, shall not apply to specific actions
21 necessary to prevent or mitigate earthquakes or other soil or geologic
22 movements,’ this interpretation is unsupported by the text of the
23 exemption. Such a construction completely ignores the limiting ideas
24 of ‘sudden,’ ‘unexpected,’ ‘clear,’ ‘imminent’ and ‘demanding
25 immediate action’ expressly included by the Legislature and would be
26 in derogation of the canon that a construction should give meaning to
27 each word in the statute. Moreover, in the name of ‘emergency’ it
28 would create a hole in CEQA of fathomless depth and spectacular
breadth. Indeed, it is difficult to imagine a large-scale public works
project, such as an extensive deforestation project or a new freeway,
which could not qualify for emergency exemption from an EIR on the
grounds that it might ultimately mitigate the harms attendant on a
major natural disaster. The result could hardly be intended by the
careful drafting of the Legislature, and is unmistakably opposed to the
policy of construing CEQA to afford the maximum possible protection
of the environment.”

(187 Cal.App.3d at 1111-1112 [italics in original]; see also *Castaic Lake Water Agency v. City of*
Santa Clarita (1995) 41 Cal.App.4th 1257, 1266-1269 [quoting this passage and ordering

1 respondents to vacate their notice of emergency exemption]; *Los Osos Valley Associates v. City of*
2 *San Luis Obispo* (1994) 30 Cal.App.4th 1670 [striking finding of emergency exemption to cover
3 groundwater pumping, finding that exemption is limited to immediate action demanded by a sudden
4 occurrence].)

5 CDFA will likely claim that the Legislature has already determined, via the Light Brown
6 Apple Moth Act of 2007 (“the Act”), that an “emergency” exists sufficient to allow it to evade the
7 requirements of CEQA. CDFA is ignoring the legislative history of the Act. The Senate Bill that
8 proposed this legislation was amended several times before it was passed. The June 21, 2007
9 amendments included a provision that “During the first 36 months of the operation of the Light
10 Brown Apple Moth Program the department’s actions pursuant to this act shall be deemed an
11 emergency response for the benefit of the environment under Division 13 (commencing with Section
12 21000) of the Public Resources Code. During this period, the department shall complete the
13 statutorily required environmental documentation.” (Heath Decl., Exh. E, p. 5 [proposed section
14 6050.1(d)].) By the September 4, 2007 amendment the time limit had been dropped from 36 months
15 to 24 months and was ultimately amended out of the proposed statute altogether. (Heath Decl., Exh.
16 E, pp. 9, 12 [proposed section 6050.1(d)].) By the time the Act was passed and Chaptered, the above
17 language had been replaced entirely with the following: “Eradication activities undertaken pursuant
18 to this article shall comply with all applicable laws and regulations and ***shall be conducted in an***
19 ***environmentally responsible manner.***” (Heath Decl., Exh. E, p. 15 [final version of Light Brown
20 Apple Moth Act, Food and Agriculture Code section 6050.1(c)(2)(C)] [emphasis added].)

21 In other words, *the Legislature had an opportunity to exempt CDFA from CEQA and*
22 *purposely chose not to do so.* CDFA cannot legitimately argue that the Legislature has sanctioned
23 its intended evasion of CEQA. The Legislature specifically commanded that CDFA comply with all
24 applicable laws and that the LBAM eradication program be conducted in an environmentally
25 responsible manner; this indicates the Legislature’s desire for full CEQA review of projects
26 undertaken to eradicate the LBAM.

27 As Dr. Harder attests, there has been no reported, quantifiable damage done by the LBAM in
28 Santa Cruz County. (Harder Decl., ¶ 3.) In other areas of the world, such as New Zealand and

1 Hawaii, even after more than 100 years of observation the LBAM is considered to be a minor pest.
2 (*Id.*) According to Dr. Harder, the LBAM will not be breeding in the winter months beginning in
3 November, as the rains begin and the temperature drops. Instead, throughout November and most of
4 the winter months the moths will remain as caterpillars and not become adults. (Harder Decl., ¶ 4;
5 *see also* Light Brown Apple Moth in California: Quarantine, Management and Potential Impacts,
6 University of California Agriculture and Natural Resources Program, September 12, 2007 [Heath
7 Decl., Exh. F, p. 6] ["Cold winter temperatures slow larval development considerably."]; comments
8 of CDFA Division Director John Connell (Heath Decl., Exh. C, p. 4) [". . . it depends on the
9 temperatures at the time of year the cooler it gets, the slower that generation or lifecycle will go."] In
10 addition, few crops and produce leave this area during winter, which further reduces the chance that
11 moths will be exported from Santa Cruz County between now and spring 2008. Moreover, since the
12 confirmed discovery of LBAM in Alameda County in early 2007, nurseries have been under
13 quarantine in all counties where LBAM has been found (including Santa Cruz County) to contain
14 and limit the distribution of the insect through the transportation of agricultural products. This also
15 further reduces the chance that moths are leaving this County or that failing to aerial spray this
16 winter will lead to a spread of the LBAM. (Harder Decl., ¶ 5.) There is no emergency.

17 The LBAM infestation, and the need to control it, is not an unexpected "sudden occurrence."
18 The fact that the infestation is already being contained and suppressed in fringe areas indicates that
19 this is a condition, not an "occurrence." (United States Department of Agriculture ("USDA")
20 Environmental Assessment ("EA") [Heath Decl., Exh. G, pp. 1-3].) The moth's presence in this
21 state was documented (at the very latest) in February 2007; steps commenced in March 2007 to
22 address the population. (*Id.*) This is in no way a "sudden occurrence" justifying evasion of CEQA.
23 CDFA's determination that there is an "emergency" that requires Checkmate to be aerially sprayed
24 in November is simply not supportable.

25 If history is any indication, CDFA will likely place great weight on the case of *Californians*
26 *for Alternatives to Toxics v. Department of Food and Agriculture* (2005) 136 Cal.App.4th 1, in order
27 to support their emergency exemption argument. That case contains one sentence, in the factual
28 background section, relating to CDFA's reliance on an emergency exception: "Because the

1 emergency regulations and program were created in response to an emergency, they were exempt
2 from CEQA." (*Id.* at 7.) There is no indication from the appellate opinion that the emergency
3 exemption was challenged or that the court evaluated the validity of the claim of an emergency
4 exemption. To that extent, the sentence should be considered dicta and disregarded.

5 In fact, a close reading of the case indicates that the court condemned exactly what CDFA is
6 trying to get away with here. The central holding of the case is that CDFA could not forego analysis
7 under CEQA relating to the use of pesticide products by relying on the certified regulatory and
8 registration program operated by the California Department of Pesticide Regulation ("DPR"). The
9 appellate court specifically condemned CDFA's reliance on DPR and struck down CDFA's EIR
10 because DPR's regulatory program did not deal with the "specific uses of pesticides in the program,
11 such as the specific chemicals used, their amounts and frequency of use, specific sensitive areas
12 targeted for application and the like" and therefore CDFA could not rely on it. (136 Cal.App. 4th at
13 16.) The Court specifically explained that CDFA's error in relying on DPR infected the analysis of
14 the impact from exposure to pesticides on people in nonagricultural areas. (*Id.* at 16-20.) If
15 anything, the *California Alternative to Toxics* case stands for the proposition that CEQA does not
16 allow CDFA to take the approach that it is taking with regard to this aerial spraying program, i.e.
17 CDFA cannot legitimately rely on DPR and US EPA to say that Checkmate is safe and therefore that
18 no further analysis is necessary as to its effects on human health and the environment.

19 **b. The Categorical Exemption Does Not Apply To This**
20 **Project**

21 Indicating CDFA's lack of confidence in its "emergency" exemption, the NOE also purports
22 to rely on a "categorical exemption" to CEQA, referencing "Class 8, Section 15308." This is a
23 reference to the CEQA Guidelines (Cal. Code of Regulations, title 14), section 15308. Public
24 Resources Code section 21084 requires the CEQA Guidelines to include a list of classes of projects
25 that have been determined not to have a significant effect on the environment and which shall,
26 therefore, be exempt from the provisions of CEQA. In response to that mandate, the Secretary of
27 Resources has determined certain classes of projects as categorically exempt from CEQA. (Cal.
28 Code of Regs., title 14, §15300.)

1 Here, CDFA relies on the Class 8 “environmental” categorical exemption. Specifically, Title
2 14, section 15308 states:

3 “Class 8 consists of actions taken by regulatory agencies, as authorized
4 by state or local ordinance, to assure the maintenance, restoration,
5 enhancement, or protection of the environment where the regulatory
6 process involves procedures for protection of the environment.
7 Construction activities and relaxation of standards allowing
8 environmental degradation are not included in this exemption.”

9 By definition, so-called “categorical exemptions” cannot have impacts to the environment.
10 CDFA’s admission that it is currently working on an EIR severely undercuts reliance on a
11 categorical exemption and indicates that CDFA recognizes that this project will have significant
12 unmitigated environmental impacts (the EIR CDFA has allegedly begun to work on has a target
13 completion date of December 2008 [Heath Decl., Exh. K, p. 4].)

14 In any event, CDFA relies on this exemption with no analysis whatsoever. There is no
15 explanation of how CDFA is assuring the maintenance, restoration, enhancement, or protection of
16 the environment by spraying a never-tested pesticide over people’s homes. There is also no
17 identification of what “regulatory procedure” CDFA is relying on to protect the environment. At
18 this point, CDFA’s use of this exemption is baseless.

19 **c. The Anticipated Effectiveness Of The Intended**
20 **Spraying Is Dubious At Best**

21 The purpose of pheromone application is to disrupt the mating cycle of the LBAM – not to
22 kill it. (Harder Decl., ¶ 6.) Pheromones are intended only to control populations of pests and are not
23 able to eradicate them. Pheromones, as a mating disruption tool, have never been shown to
24 completely eliminate any insect pest anywhere in the world. The protocol CDFA is using here,
25 aerially spraying pheromones over urban populations, is without precedent. (Harder Decl., ¶ 6.)

26 Within areas off-limits to spraying (such as over open water, in the terrestrial buffer zones of
27 the Monterey Bay National Marine Sanctuary, etc.) populations of the moth will remain viable and
28 intact before, during, and after the aerial spraying. Any LBAM present during the winter months in
these areas will be able to effectively re-infect treated areas. (Harder Decl., ¶ 7.)

1 As there are no known studies or reports on the effectiveness of using pheromones as an
2 eradication tool as CDFA intends to use them here, there should be no expectation that the proposed
3 aerial spraying will be effective. As Dr. Harder attests, there is no basis to conclude that when
4 CDFA finishes spraying the County several years from now, the LBAM will be eliminated from our
5 environment. (Harder Decl., ¶ 8.) Given that, CDFA has no reasonable basis for rushing in to spray
6 this County before testing can be completed as to the efficacy of the program.

7 **d. CDFA's Own Researchers Have Concluded That No**
8 **One Tool Is Going To Eradicate The LBAM**

9 CDFA would like the Court to believe that aerial spraying is the only alternative to eradicate
10 or control the LBAM. However, that is not correct. CDFA's Technical Working Group ("TWG")
11 met in San Jose on May 16-18, 2007 to discuss a response to the LBAM infestation. The group's
12 recommendations were released on June 8, 2007. (Heath Decl., Exh. H.) The group noted that:

13 "Eradication will require the integration of several control tactics,
14 which may include mating disruption pheromone formulations,
15 insecticide treatments (e.g. Bt spinosyns) sterile insects and other
16 techniques (e.g., biological control). *Ground and aerial application* of
17 these materials should be used as needed. Some of these tactics are
18 either in the development stage or have not been used on the scale that
will be required to eradicate this pest from California. As a result,
successful eradication will rely on refinement and adaptation of
multiple control and regulatory tactics."

19 (Technical Working Group Recommendations, p. 1; Heath Decl., Exh. H [emphasis added].)

20 In his September 28, 2007 "Proclamation of an Eradication Project Regarding the Light
21 Brown Apple Moth," CDFA Undersecretary George Gomes listed options that he "considered" for
22 the eradication of LBAM in Monterey County. (Heath Decl., Exh. I.) They included: 1) foliar
23 application of an organic pesticide by ground; 2) foliar application of an organic pesticide or a
24 pheromone by air; 3) mating disruption using pheromone-infused plastic twist ties; 4) mass trapping;
25 and 5) quarantine measures. Despite the fact that these alternatives are identified, they are not
26 sufficiently analyzed and are basically glossed over in jumping to an immediate conclusion that
27 aerial spraying is necessary.

1 As recently recognized by one academic group “no single control technique currently exists
2 that can be practically, safely and effectively implemented over the entire LBAM-infested area.”
3 (Heath Decl., Exh. F, p. 8.) Thus, CDFA cannot legitimately state that the fate of eradicating LBAM
4 depends on this one November aerial spraying in Santa Cruz County in light of the unknown factors
5 that CDFA’s own TWG recognizes.

6 Dr. Harder attests that there are options to aerial spraying that have not been fully considered.
7 Sticky board traps and twist-ties are some of the better alternatives presented so far. (Harder Decl., ¶
8 10; Heath Decl., Exh J [CDFA News Release – “Pheromone “Twist Ties” to Aid in Eradication of
9 Light Brown Apple Moth”].) However, under CDFA’s current protocol, environmental review will
10 be delayed, no controls are being established to determine the effectiveness of the sticky board traps
11 and twist-ties currently in place, and effective monitoring is not designed into the project. (Harder
12 Decl., ¶ 10.) CDFA’s actions simply do not make sense.

13 e. **CDFA Is, At The Very Most, Absolutely Unsure Of**
14 **The Environmental Impacts Of Aerially Spraying**
15 **This Pesticide**

16 In an October 4, 2007 letter to Assemblyperson John Laird, Secretary Kawamura stated that
17 “[W]e have asked for a reevaluation of all health and environmental-related issues surrounding the
18 use of pheromones from DPR [Department of Pesticide Regulation], the Office of Environmental
19 Health Hazard Assessment, California Department of Health Services and California Department of
20 Health.” (Heath Decl., Exh. K, p. 5.) Secretary Kawamura also emphasized that he has “begun the
21 appointment process for an Environmental Advisory Task Force to provide the department with
22 third-party advice regarding LBAM. This body will be comprised of representatives from
23 environmental organizations, public regulatory and health agencies, organic and conventional
24 agricultural entities as well as university researchers and scientists.” (*Id.*) First, this statement
25 incorrectly assumes that all (or any) health and environmental-related issues were “evaluated” to
26 begin with. Second, *these are actions that should be completed prior to, and not after*, spraying
27 Santa Cruz County, particularly in light of the less-than-clear effectiveness of one spraying in
28 November 2007. (*See* Harder Decl., ¶¶ 5-7.) Moreover, the Secretary’s comments are undercut and
contradicted by the statements in his October 26, 2007 letter to Assemblyperson Laird, in which he

1 states that “the conduct of health studies is not within CDFA’s sphere of operational capacity.”
2 (Heath Decl., Exh. L, p. 3.) In the same letter, Secretary Kawamura states that outside of a U.C.
3 Davis test regarding impacts to fresh water and marine fish invertebrates (which at this point appears
4 limited to mussels) that is expected to be completed by the end of the year, “neither CDFA nor
5 USDA is currently considering another third-party review” of the toxicity of the ingredients in
6 Checkmate. (Heath Decl., Exh. L, p. 2.)

7 No testing of CDFA’s proposed aerial spraying protocol or of Checkmate itself has been
8 conducted and no peer-reviewed literature discusses the long-term health effects of aerial spraying
9 this substance over parks, schools, sandboxes, and backyards. (Harder Decl., ¶ 9.) In New Zealand
10 and Australia, aerially applied pheromones to control LBAM have been mostly restricted to
11 agricultural areas and have not been used extensively over human populations or over natural areas.
12 (*Id.*) As Dr. Harder notes, aerial spraying over urban areas includes rooftops and streets, which will
13 allow the pheromone to become concentrated in drainpipes and along street drainage ways resulting
14 in unknown and untested consequences. (Harder Decl., ¶ 11.) Moreover, given that Santa Cruz
15 County has more than 30 species of Tortricid moths that will be attracted by this pheromone, use of
16 this pesticide may have unintended consequences for non-target species (this is particularly
17 disturbing given that CDFA’s restricted materials permit application requests permission to spray
18 both Checkmate LBAM-F *and* Checkmate OLR-F, contrary to earlier representations by CDFA that
19 it would only be spraying Checkmate LBAM-F). Finally, although CDFA Undersecretary Gomes
20 states that “The Department will not apply pesticides to water bodies, riparian habitat areas or areas
21 lacking host plants,” he fails to state how he plans to accomplish that effectively in Santa Cruz
22 County, which is brimming with water bodies and riparian habitat, especially compared to Monterey
23 County. (Heath Decl., Exh. I, p. 2.) Also, unlike in Monterey County, CDFA has yet to provide the
24 public with evidence of a permit from the Monterey Bay Marine Sanctuary.⁴

25 The USDA’s EA is peppered with vague and non-committal assertions about the safety of
26 this product. The “available” toxicity data “suggests” that lepidopteran pheromones have “very low”

27
28 ⁴ Furthermore, the County is informed and believes that CDFA has not yet obtained the necessary
clearance to begin spraying from the United States Fish and Wildlife Service (“USFWS”), as it
relates to the impacts of spraying on endangered species in the County.

1 chronic toxicity to mammals. (Heath Decl., Exh. G, p. 10). Exposure to humans, domestic and
2 other nontarget animals, and the environment is "expected to be minimal." (Heath Decl., Exh. G, p.
3 11.) "Cumulative effects from potential pheromone use over several years is "not expected" to occur
4 based on the known toxicity data. (Heath Decl., Exh. G, p. 12.) In his testimony before the Board of
5 Supervisors, Jim Ryan from the USDA stated that the pesticide is "practically non-toxic." (Heath
6 Decl., Exh. C, p. 12.) These are hardly ringing endorsements about the safety of aerial spraying
7 Checkmate over this County's neighborhoods.

8 The bottom line is that CDFA has no idea what the long-term impacts of aeri ally spraying
9 this pesticide will be. Until it learns what they are, the Court should not allow this spraying to go
10 forward.

11 **2. CDFA's Actions Will Act As A Nuisance And A Trespass**

12 In order to succeed on its trespass claim, the County must prove that 1) it owns and controls
13 the property at issue; 2) that CDFA intentionally, recklessly, or negligently entered the County's
14 property; 3) that CDFA did not have the County's permission to enter its property; 4) that the
15 County was actually harmed by such entry; and 5) that CDFA's entry was a substantial factor in
16 causing the harm. (California Civil Jury Instructions, CACI 2000, Trespass.)

17 Here, elements 1, 2, 3, and 5 are not even at issue: it should be undisputed that CDFA will
18 intentionally spray the County's property and its employees without its permission, and that, to the
19 extent the County suffers harm related to the spraying, CDFA's actions will substantially cause it.
20 While CDFA will likely dispute the fourth element at this point, CDFA cannot legitimately say that
21 this product is safe as it is proposed to be applied, because it has never been sprayed aeri ally over an
22 urban population and they therefore have no solid confirmation of what it is going to do to the
23 County or its inhabitants.

24 In order to succeed on its nuisance claim, the County will have to prove that 1) it owns or
25 controls the property at issue; 2) that CDFA created a condition that was harmful to health, or
26 indecent or offensive to the senses, or an obstruction to the free use of the County's property; 3) so
27 as to interfere with the comfortable enjoyment of the property; 4) that the County did not consent to
28 the conduct; 5) that an ordinary person would be reasonably annoyed or disturbed by the conduct; 6)

1 that the County was harmed; 7) that CDFA's conduct was a substantial factor in causing the harm;
2 and 8) the seriousness of the harm outweighed the public benefit of CDFA's conduct. (California
3 Civil Jury Instructions, CACI 2021, Private Nuisance – Essential Factual Elements.) The County
4 will have to prove a substantial and unreasonable interference with the use and enjoyment of its
5 property in order to succeed on this claim. (*Koll-Irvine Center Property Owners Assn. v. County of*
6 *Orange* (1994) 24 Cal.App.4th 1036, 1041; *San Diego Gas & Electric Co. v. Superior Court* (1996)
7 13 Cal.4th 893, 938.)

8 On the nuisance claim, the County submits that elements 1, 2, 3, 4, 5 and 7 should be
9 undisputed: CDFA will intentionally spray the County with a product that is offensive to the senses,
10 the County does not consent to it, plenty of ordinary people are reasonably disturbed by it, and to the
11 extent the County is harmed, CDFA will have caused it. CDFA will likely dispute that the County is
12 harmed by this and claim that even if it is, the benefits outweigh the detriments. However, CDFA
13 has no foundation for saying that *when it cannot legitimately state what the actual, comprehensive*
14 *"detriments" even are (much less the benefits).*

15 **B. In The Absence Of Testing Establishing That This Pesticide Is Safe, Because Of**
16 **The Potential Consequences The Court Should Assume That The County And**
17 **Its Residents Will Be Irreparably Harmed If This Spraying Takes Place**

18 The balance of hardships favors the issuance of immediate injunctive relief. Evidence
19 provided by the residents of Monterey County indicate that if the Court does not stop this aerial
20 spraying, residents of Santa Cruz County could very well suffer the same adverse health symptoms
21 residents of Monterey County have experienced, including difficulty breathing, sore throats,
22 headaches, dizziness, and skin and eye irritation. These symptoms cannot be summarily dismissed
23 as minor or inconsequential because no one knows whether they are the tip of the iceberg of much
24 larger problems that will not manifest themselves for years to come. Likewise, the physical
25 symptoms of eleven-month-old babies cannot be simply rejected as "psycho-somatic."

26 If the spraying is not performed, CDFA claims the moth will reproduce, expand its range,
27 and cause crop damage. As set forth above, the evidence does not support that contention and the
28 efficacy of one spraying in November is highly suspect. Moreover, the purported economic

1 consequences of this moth infestation alone do not outweigh the potential threat to human health and
2 safety that must be assumed in the absence of verifiable data to the contrary.

3 CDFA is not considering alternatives that would reduce the threat to health and human
4 safety. Clearly the use of scented sticky traps or twist-ties in designated locations would have less
5 environmental impacts than the wholesale aerial spraying of the entire County. While twist-ties
6 have evidently been rejected because of the cost and manpower necessary to apply them, there is no
7 explanation, verification, or confirmation of the data used to justify this conclusion.

8 Aerial spraying of pheromones has never been successful in eradicating the LBAM. (Harder
9 Decl., ¶ 6.) Accordingly, CDFA cannot possibly argue that its need to eradicate this pest, with this
10 tool, outweighs the health and safety concerns of the residents of this community. CDFA will not be
11 irreparably harmed if the Court grants the County injunctive relief in this case – but the residents of
12 this County certainly could be – and by the time that irreparable harm is confirmed, it will be too late
13 to do anything about it.

14 CONCLUSION

15 CDFA is preparing to violate CEQA and engage in a trespass and nuisance by spraying an
16 untested pesticide on most of the citizenry of Santa Cruz County. There is no real emergency here,
17 and people in Monterey County believe they have been injured by the aerial spraying of this
18 pesticide. The County has tried to negotiate with CDFA to consider feasible alternatives or
19 mitigate the environmental impacts of this proposed spraying, but CDFA has refused to postpone
20 its spraying program.

21 If this Court does not issue an order to stop the spraying, even temporarily until more data
22 can be gathered, the rights of the County and its citizenry will be violated far before this matter
23 ever comes to hearing. Thus, plaintiff and petitioner County of Santa Cruz respectfully requests
24 that this Court grant its request for a temporary restraining order, and order defendant and
25 respondent CDFA to refrain from aerial spraying the pesticide Checkmate over any portion of
26 Santa Cruz County unless and until third-party testing has been accomplished to determine the

27 ///

28 ///

1 possible health effects of aerial application of this pesticide, including the actual effects on
2 residents of Monterey County, and until an EIR has been certified by CDFA.

3
4 Dated: October 30, 2007

DANA McRAE, COUNTY COUNSEL

5
6 By 

JASON M. HEATH

Assistant County Counsel

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OCT 30 2007

ALEX CALVO, CLERK
DEPUTY, SANTA CRUZ COUNTY

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SUPERIOR COURT OF CALIFORNIA

COUNTY OF SANTA CRUZ

COUNTY OF SANTA CRUZ

Case No. **CV 158516**

Plaintiff/Petitioner,
v.

**PETITION FOR WRIT OF MANDATE
AND COMPLAINT FOR
DECLARATORY AND INJUNCTIVE
RELIEF**

CALIFORNIA DEPARTMENT OF FOOD
AND AGRICULTURE; A.G. KAWAMURA, in
his official capacity as Secretary of the
California Department of Food and Agriculture;
and DOES 1 through 100, inclusive,

Defendants/Respondents.

Plaintiff and Petitioner County of Santa Cruz ("the County") alleges as follows:

1. This case concerns the announced intention of Defendant and Respondent California Department of Food and Agriculture ("CDFA") to aerial spray large portions of Santa Cruz County with a pesticide designed to address the Light Brown Apple Moth ("LBAM"). The pesticide CDFA intends to spray – Checkmate LBAM-F ("Checkmate") – is a blend of LBAM pheromones and chemicals designed to deliver the pheromones to the atmosphere. This pesticide is allegedly designed to confuse male moths, prevent them from finding female moths, and thus interrupt the LBAM's breeding cycle. Under order of the Governor's Office, CDFA has disclosed

1 the chemical ingredients that compose Checkmate; however CDFA has refused to disclose the
2 concentration of the chemicals such that the Santa Cruz County community can intelligently
3 evaluate the risks of aerial spraying of Checkmate on health, safety and the environment.

4 2. There have been no scientific studies to determine whether aerial spraying of
5 Checkmate is safe for humans or animals and there is no emergency requiring that this pesticide be
6 aerially sprayed before further testing and research is done to assess its safety. Recently, CDFA
7 began aerially spraying Checkmate OLR-F and LBAM-F in Monterey County. Numerous citizens
8 have complained of adverse health effects that they trace directly to the spraying. With this
9 lawsuit, the County seeks a court order requiring CDFA to refrain from aerial spraying Checkmate
10 in Santa Cruz County.

11 **ALLEGATIONS CONCERNING THE PARTIES**

12 3. Plaintiff and Petitioner County of Santa Cruz is a political subdivision of the State
13 of California.

14 4. Defendant and Respondent CDFA is an agency of the State of California responsible
15 for, among other things, regulating the destruction of insects that are harmful to California's
16 economy.

17 5. Defendant and Respondent A.G. Kawamura is the Secretary of CDFA and is
18 generally responsible for administering CDFA in accordance with State and Federal laws. Secretary
19 Kawamura is being sued in his official capacity only. All references in this complaint to CDFA
20 include Secretary Kawamura.

21 6. The true names and capacities of the defendants and respondents named herein as
22 Does 1 through 100, inclusive, are unknown to the County, who therefore sues said defendants and
23 respondents by such fictitious names. The County will amend this Complaint/Petition to show
24 their true names and capacities when ascertained.

25 **JURISDICTION AND VENUE**

26 7. This Court has jurisdiction over this action pursuant to Sections 187, 526, 1085, and
27 1094.5 of the California Code of Civil Procedure. The relief requested is authorized under Civil
28

1 Code section 3420, *et seq.* (preventative relief) and Code of Civil Procedure section 525, *et seq.*
2 (injunctive relief).

3 8. Venue for this action properly lies in this Court pursuant to California Code of Civil
4 Procedure section 393 and Government Code section 955.3.

5 **GENERAL ALLEGATIONS COMMON TO ALL CAUSES OF ACTION**

6 9. On or about September 21, 2007 CDFA disclosed that it intends to aerial spray
7 Checkmate on a large area in the County starting November 4, 2007. The approval of the spraying
8 was accompanied by a finding by CDFA that this project was exempt from the California
9 Environmental Quality Act ("CEQA"), Public Resources Code section 21000, *et seq.*, because the
10 project was in response to an emergency pursuant to Public Resources Code section 21080(b) and
11 was exempt under a "categorical exemption" for actions taken to help the environment.

12 10. CDFA's use of emergency and categorical exemptions to evade the requirements of
13 CEQA is arbitrary, capricious, and contrary to law. There is no emergency, and the County is
14 informed and believes that CDFA's mass aerial spraying of this pesticide will not help the
15 environment. Given the season, the current quarantine, and the fact that few agricultural products
16 are transported from this County after November 1, the County is informed and believes that
17 LBAMs will neither breed nor be transported out of the County in sufficient numbers to justify the
18 spraying in November. The use of this product is experimental and is not expected to eradicate the
19 LBAM in this County. Moreover, no quantifiable damage to crops in this County has been
20 attributed to the LBAM. Reasonable alternatives to the contemplated spraying have been identified
21 but are being ignored or dismissed by CDFA.

22 11. The County is informed and believes that Checkmate may be harmful to humans
23 when applied aurally, and contend that at the very least it is an open question at this point as this
24 type of spraying has never been done in an urban setting before last month in Monterey County and
25 insufficient testing has been completed to determine whether the chemicals in Checkmate, either
26 individually or in conjunction with one another, cause injury to humans or the environment. Many
27 people in Monterey County have reported suffering adverse health effects after the recent spraying
28 there, such as respiratory illness, congestion, eye, ear, nose and throat irritation, headaches, muscle

1 fatigue, dizziness, itching skin, rashes, and nausea. Moreover, the County is informed and believes
2 that the spraying may have a significant adverse effect on the environment, because these chemicals
3 have known side effects and are being delivered aerially in a manner that has been untested in this
4 environment.

5 **FIRST CAUSE OF ACTION**

6 **[Trespass]**

7 12. The previous paragraphs of this Complaint are incorporated herein by reference.

8 13. The County owns and controls substantial properties where it employs a sizeable
9 work force, confines jail detainees entrusted to its care, treats patients, and provides services for its
10 citizenry. CDFA intends to aerially spray the County's property with Checkmate. CDFA does not
11 have the consent of the County to apply this pesticide on its property. Moreover, the County
12 employs persons in a public safety capacity (peace officers, firefighters, public works employees)
13 that will be required to be patrolling and working throughout the County when this spraying occurs.
14 In addition, the County is inhabited by homeless persons who sleep in County parks and on public
15 property and will be unable to avoid being sprayed on by escaping indoors. Plaintiff is informed and
16 believes that its employees and citizens will be negatively impacted and may be physically or
17 psychologically harmed if they come into contact with the Checkmate pesticide and that the
18 pesticide will be a substantial factor in causing that harm.

19 WHEREFORE, the County prays for judgment as set forth below.

20 **SECOND CAUSE OF ACTION**

21 **[Nuisance]**

22 14. The previous paragraphs of this Complaint are incorporated herein by reference.

23 15. By aerially spraying the Checkmate pesticide over property owned and controlled by
24 the County, the County is informed and believes that CDFA will create a condition that is harmful to
25 the health of the County's employees and citizens and will create a condition that is indecent and
26 offensive to the senses of those individuals. CDFA's conduct will act as an interference with the
27 County's comfortable use of its property and that of its citizenry and the County does not consent to
28 CDFA's conduct in aerially spraying the pesticide over these properties. Ordinary persons would be

1 reasonably annoyed or disturbed by CDFA's conduct and the County is informed and believes that
2 its employees and citizens will be harmed both physically and psychologically by CDFA's spraying
3 regimen. The County asserts that the seriousness of the harm caused to these individuals outweighs
4 the public benefit of CDFA's aerial spraying, and that the spraying of this pesticide is a substantial
5 and unreasonable interference with the County's employees and citizenry's use and enjoyment of the
6 County's, and their own, property.

7 WHEREFORE, the County prays for judgment as set forth below.

8 **THIRD CAUSE OF ACTION**

9 **[Writ of Mandate -- Violation of CEQA -- Code Civ. Proc., §1085]**

10 16. The previous paragraphs of this Complaint are incorporated herein by reference.

11 17. The California Environmental Quality Act ("CEQA"), Public Resources Code section
12 21000, *et seq.*, requires that all projects that may have an effect on the environment be rigorously
13 analyzed to ensure that feasible alternatives and feasible mitigation measures have been adequately
14 considered and utilized to the extent possible to lessen the project's impact on the environment.
15 Projects carried out by public agencies are subject to the same level of review and consideration as
16 private projects. (Pub. Resources Code, § 21001.1.) CEQA requires that if there is substantial
17 evidence that a project may have a significant impact on the environment, unless an applicable
18 exemption applies, the lead agency in charge of approving a project must prepare an Environmental
19 Impact Report ("EIR") to analyze the environmental issues and provide a basis for public discussion
20 and information concerning the environmental consequences of a relevant project. (Pub. Resources
21 Code, §§ 21061; 21080(d).)

22 18. On October 3, 2007, without any publicly noticed hearings, CDFA filed a Notice of
23 Exemption notifying the State Office of Planning and Research that it intended to embark on a
24 project of aerial pesticide spraying in Santa Cruz County to eradicate the LBAM. The Notice of
25 Exemption alleged that the project was exempt from the requirements of CEQA as an "Emergency
26 Project" under Public Resources Code section 21080(b)(4) and CEQA Guideline Article 18, section
27 15269(a). The Notice of Exemption also alleged that the project was exempt from the requirements
28 of CEQA under a "Categorical Exemption" per CEQA Guideline Article 19, section 15308 (class 8).

1 19. The Notice of Exemption is void and unlawful because the project is not addressing
2 an "emergency," nor is it "categorically exempt" from CEQA as a matter of law. CDFA's failure to
3 comply with CEQA by certifying an EIR prior to approving the aerial spraying of Checkmate over
4 the County was arbitrary, capricious, and contrary to law in that there is no true emergency and the
5 aerial spraying is not going to protect the environment.

6 20. CDFA has a clear and present duty to abide by the statutory requirements of CEQA
7 and the County has a clear, present, and beneficial right to the performance of that duty. The County
8 has no plain, speedy and adequate remedy at law and will suffer irreparable harm unless this Court
9 exercises its equitable and mandatory powers by requiring CDFA to comply with its statutory duties
10 by issuing a Peremptory Writ of Mandate compelling CDFA to comply with CEQA, including but
11 not limited to certifying an EIR regarding this project, prior to engaging in an aerial spray campaign
12 over Santa Cruz County.

13 WHEREFORE, the County prays for judgment as set forth below.

14 **FOURTH CAUSE OF ACTION**

15 **[Declaratory Relief]**

16 21. The previous paragraphs of this complaint are incorporated herein by reference.

17 22. An actual controversy has arisen and now exists between plaintiff and petitioner
18 County of Santa Cruz on the one hand, and defendant and respondent CDFA on the other,
19 concerning their respective rights and duties in that the County contends that CDFA has illegally
20 failed to comply with CEQA, has not properly determined that the aerial spraying of Checkmate is
21 exempt from CEQA, has not properly determined that Checkmate is safe for humans and animals
22 when delivered to the environment aerially, and is not permitted under law to assault the residents of
23 the County with an untested pesticide and create a trespass and nuisance that will have deleterious
24 consequences to the health and welfare of the people living in this community. CDFA contends that
25 it is exempt from complying with CEQA and that it is legally authorized to aerially spray Checkmate
26 over the County.

27 23. The County requests a judicial determination of its rights and a declaration that
28 CDFA is not permitted to aerially spray Checkmate over the County.

1 24. A judicial declaration is necessary and appropriate at this time under the
2 circumstances in order that the County may ascertain its rights with regard to the intended aerial
3 spraying.

4 WHEREFORE, plaintiff and petitioner County of Santa Cruz prays for a judgment against
5 defendants and respondents CDFA and A.G. Kawamura, and each of them, as follows:

6 1. For Alternative and Peremptory Writs of Mandate to compel CDFA and A.G.
7 Kawamura to withdraw the Notice of Exemption and set aside their approval of the aerial spraying
8 of Santa Cruz County unless and until they have certified an EIR in compliance with CEQA and
9 further testing is conducted to ensure that this pesticide is safe for humans and the environment;

10 2. For temporary, preliminary and permanent injunctive relief to prohibit CDFA and
11 A.G. Kawamura from aerial spraying the pesticide Checkmate in Santa Cruz County unless and
12 until they have certified an EIR in compliance with CEQA and further testing is conducted to
13 ensure that this pesticide is safe for humans and the environment;

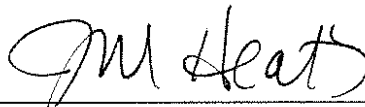
14 3. For costs of suit, including reasonable attorneys fees incurred in this action under
15 Code of Civil Procedure section 1021.5; and

16 4. For such other and further relief as the court deems proper.
17

18 Dated: October 30, 2007

DANA McRAE, COUNTY COUNSEL

19
20 By



JASON M. HEATH

Assistant County Counsel

**Attorneys for Plaintiff and Petitioner
COUNTY OF SANTA CRUZ**

1 DANA McRAE, State Bar No. 142331
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FILED
OCT 30 2007

ALEX CALVO, CLERK
BY
DEPUTY, SANTA CRUZ COUNTY

11 **Attorneys for Plaintiff/Petitioner County of Santa Cruz**

12 **SUPERIOR COURT OF CALIFORNIA**

13 **COUNTY OF SANTA CRUZ**

14 **COUNTY OF SANTA CRUZ**

Case No. 158516

15 Plaintiff/Petitioner,

16 v.

**EX PARTE APPLICATION FOR
TEMPORARY RESTRAINING
ORDER AND ORDER TO SHOW
CAUSE RE: PRELIMINARY
INJUNCTIVE RELIEF**

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,

Date: October 31, 2007

Time: 1:00 p.m.

Dept: 8

22 Defendants/Respondents.

23 Plaintiff and petitioner County of Santa Cruz seeks a Temporary Restraining Order and
24 Preliminary Injunction to order defendants California Department of Food and Agriculture
25 ("CDFA") and Secretary A.G. Kawamura to refrain from aerial spraying Santa Cruz County with
26 the pesticide Checkmate unless and until appropriate testing and/or studies have been conducted to
27 determine the effects on human health and safety and the environment, and until an Environmental
28 Impact Report weighing reasonable alternatives and identifying appropriate mitigation measures
has been drafted and considered under the California Environmental Quality Act, Public Resources
Code section 21000, *et seq.*

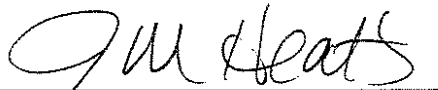
1 This application is made pursuant to Code of Civil Procedure Sections 526 and 527 and
2 Rule 3.1200, *et seq.* of the California Rules of Court on the grounds that Plaintiff will suffer great
3 or irreparable injury if injunctive relief is not obtained immediately.

4 This application is based on this Application, the accompanying Memorandum of Points
5 and Authorities, the accompanying Complaint/Petition, the Declarations of Jason M. Heath, Dr.
6 Richard Philp, Dr. Daniel Harder, Timothy Wilcox, Kristy Sebok, Gordon Smith, Brook Sebok,
7 Katherine Koviak, and all pleadings, papers and evidence as will be submitted at the hearing in this
8 matter.

9
10 Dated: October 30, 2007

DANA McRAE, COUNTY COUNSEL

11
12 By



JASON M. HEATH

Assistant County Counsel

Attorneys for Plaintiff

COUNTY OF SANTA CRUZ

1 DANA McRAE, State Bar No. 142331
2 County Counsel, County of Santa Cruz
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OCT 30 2007

ALEX CALVO, CLERK
BY [Signature]
DEPUTY, SANTA CRUZ COUNTY

11 **Attorneys for Plaintiff/Petitioner County of Santa Cruz**

12 SUPERIOR COURT OF CALIFORNIA

13 COUNTY OF SANTA CRUZ

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

23 I, Daniel Harder, hereby declare:

24 1. I am a resident of Boony Doon, Santa Cruz County. I have a doctoral degree in
25 Botany from U.C. Berkeley and I am currently employed as the Executive Director of the Arboretum
26 at University of California, Santa Cruz. My duties in this position include maintaining the valuable
27 and diverse collection of plants at the Arboretum and conducting research and education programs
28 concerning plant science issues. I am also a member of the Santa Cruz Nursery Light Brown Apple
Moth ("LBAM") Task Force. My academic and professional training and experiences have taught
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, aurally 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 aurally 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 CDFA 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 CDFA 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 30 day of October 2007 at Santa
27 Cruz, California.

28 
DANIEL HARDER, Ph.D

1 DANA McRAE, State Bar No. 142331
2 County Counsel, County of Santa Cruz
3 JASON M. HEATH, State Bar No. 180501
4 Assistant County Counsel
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OCT 30 2007

ALEX CALVO, CLERK
DEPUTY, SANTA CRUZ COUNTY

Attorneys for Plaintiff/Petitioner County of Santa Cruz

SUPERIOR COURT OF CALIFORNIA

COUNTY OF SANTA CRUZ

COUNTY OF SANTA CRUZ

Case No. 158516

Plaintiff/Petitioner,

v.

**DECLARATION OF RICHARD PHILP
IN SUPPORT OF EX PARTE
APPLICATION FOR TEMPORARY
RESTRAINING ORDER**

CALIFORNIA DEPARTMENT OF FOOD
AND AGRICULTURE; A.G. KAWAMURA, in
his official capacity as Secretary of the
California Department of Food and Agriculture;
and DOES 1 through 100, inclusive,

Date: October 31, 2007

Time: 1:00 p.m.

Dept: 8

Defendants/Respondents.

I, Richard Philp, hereby declare:

1. I am an Emeritus Professor of Pharmacology and Toxicology with the University of Western Ontario in London, Canada. I have a Ph.D. in Pharmacology from the University of Western Ontario and have spent my career as a professor of Pharmacology and Toxicology. I have published over 90 peer-reviewed manuscripts in the area of pharmacology and toxicology and I am an experienced researcher on pharmacology and toxicology issues. A copy of my curriculum vitae is attached hereto as Exhibit A. I have personal knowledge of the facts set forth below, and if called upon to testify thereto I could and would do so competently.

1 2. After Monterey County was aerially sprayed with the pesticide Checkmate OLR-F in
2 September 2007, I was asked to review the health hazards associated with this aerial spraying. In
3 conducting my review, I reviewed available literature and government documents concerning
4 Checkmate and I drafted a preliminary report on this issue, a true and correct copy of which is
5 attached hereto as Exhibit B. My general conclusions and recommendations are set forth at page 8
6 of my final report.

7 3. In sum, I have concluded that no chronic toxicity study of Checkmate has been
8 conducted in a mammalian species by any route of administration and certainly not involving
9 exposures to the product to be employed by the intended method of application (aerosol spray of
10 microcapsules). Any claims of the safety of Checkmate are based on extrapolation from acute
11 toxicity studies and one sub-acute, 90-day study that employed the oral route of administration of
12 certain chemicals related, but not identical, to those used in Checkmate. One cannot conclude from
13 these studies that Checkmate is a safe product to aerial spray over an urban population, nor can one
14 guarantee that longer-term, repeated exposures of humans are without risk. A chronic toxicity study
15 of at least 90 days and preferably six months duration, employing daily exposure to aerosol of
16 Checkmate at a high exposure level would be required before a conclusion of safety could be
17 legitimately drawn. It is customary in such studies to use a much higher exposure level in order not
18 to miss adverse reactions that might occur too infrequently to be detected at lower exposures.

19 4. In none of the documents I reviewed, including the USDA environmental assessment,
20 is there any mention of previous experience with aerial spraying of populated, urban areas. Previous
21 efforts to control LBAM in the proposed treatment area employed ground application techniques.
22 Pheromone baited traps were placed throughout the State of California to monitor the moth
23 population and distribution. Isolated populations in Napa and Oakley were treated using ground
24 equipment with *Bacillus thuringiensis kurstaki* (Btk) (USDA Environmental Assessment, 2007, p2,
25 para 2). This is a bacterial product that attacks the early larval stages of most lepidopterans.

26 5. There is ample evidence that many pheromones and semiochemicals (the synthetic
27 counterparts of pheromones) possess significant toxicity for aquatic species. This suggests that aerial
28

1 spraying carries an increased environmental risk given the difficulty in confining the spray to the
2 target area.

3 6. In summary, and as more fully explained in my attached report, the USDA and EPA
4 documents I reviewed are filled with contradictory statements regarding the toxicity testing of
5 pheromones, inappropriate extrapolations from irrelevant toxicity studies, and are suggestive of a
6 poor understanding of basic pharmacological and toxicological principles.

7 7. In my opinion, since the decision to use aerial spraying as the method of application
8 appears to have been made entirely on economic grounds, the decision should be revisited given the
9 lack of adequate evidence for its safety in the long term. Either ground-based methods of
10 application should be employed or an adequate chronic toxicity study should be conducted. Ground-
11 based technology has the added advantage of posing less risk to the environment.

12 8. Finally, I have recently reviewed the toxicology of the "inert" ingredients provided to
13 me and found that: i) some have been shown to be skin irritants in animal studies; ii) no information
14 regarding respiratory toxicity or absorption is generally available; iii) no carcinogenicity studies
15 have been performed on some; and iv) I was unable to find inhalation toxicity studies for any of the
16 inert ingredients. This further supports my conclusion that this product should not be aerially
17 sprayed as intended at this time.

18 I declare under penalty of perjury under the laws of the State of California the foregoing is
19 true and correct and that this Declaration was executed on this 29th day of October 2007 at
20 London, Canada.

21
22 DR. RICHARD PHILP
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1 spraying carries an increased environmental risk given the difficulty in confining the spray to the
2 target area.

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20 London, Canada.

21 
22 DR. RICHARD PHILP
23
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CURRICULUM VITAE

Richard Blain Philp

Date of birth- January 19, 1934 **Place-** Guelph, Ontario, Canada

Degrees- D.V.M, University of Toronto, 1957
Ph.D. (Pharmacology), University of Western Ontario, 1964

Post Doctoral Studies- Dept. of Pharmacology, Royal College of Surgeons of England, London, UK, 1964-65

Academic Appointments- Dept. of Pharmacology, University of Western Ontario
Assistant Professor, 1965
Associate Professor, 1970
Professor, 1973
Chair of Department, 1981-86
Professor Emeritus 1996 (Early retirement)
Visiting Professor, Dept. Anatomical Pathology, Prince Henry Hospital, University of New South Wales, Australia, 1986-87

Honours, Awards-

Ontario Veterinary College Alumni Fellowship, 1961-64
Cairncross Award for Best Pharmacological Thesis, 1964
Canadian Defence Research Board Post Doctoral Fellowship in Aviation Medicine, 1964-65
Undersea Medical Society Stover-Link Award for Research in Support of Manned, Undersea Activity, 1977
(US) National Oceanic and Atmospheric Administration "Aquanaut" Certificate, 1976

Graduate Students Supervised Successfully (career totals)- M.Sc.-16, Ph.D.-14
PUBLICATIONS

Peer-reviewed papers- Over 90 peer-reviewed manuscripts have been published. Earlier ones related to the role of platelets in thromboembolism and the pharmacological inhibition of platelet function and thrombogenesis, or to the pathogenesis and prevention of Decompression Sickness in divers. Other topics such as the carcinogenesis of bracken fern have also been published. From 1997-2001 several papers were published on heavy metal pollution of the Florida panhandle coast and the effects of cadmium on the marine sponge *Microciona prolifera*. Drug interactions with herbal remedies has also been the subject of a more recent text and journal article.

Textbooks

Philp RB. Methods of Testing proposed Antithrombotic Drugs. CRC Press, Boca Raton, 1981

Philp, R.B. Environmental Hazards and Human Health. CRC Press, Boca Raton, 1995

Philp RB. Ecosystems and Human Health: Environmental Hazards and Toxicology (2nd Edit of above). CRC Press, Boca Raton, 2001

Philp RB. Herbal-Drug Interactions and Adverse Effects: An evidence-based quick reference text. McGraw Hill, New York, 2004.

Several chapters have been incorporated in other texts.

Areas of Expertise

I have been consulted by several major pharmaceutical companies to review their pre-clinical toxicology and pharmacology data prior to a New Drug Submission. This entailed the detailed examination of hundreds of documents covering every aspect of animal testing for toxicity and efficacy as well as the results of cell culture testing such as with the Ames *Salmonella typhimurium* bacterial cell culture test for mutagenicity and various mammalian cell cultures. Typically these documents would fill some 15 cartons about 2'x2'x2'. The process normally consumes 100-125 hr.

This experience and expertise is especially relevant to my review of alleged toxicity data for the CheckMate products.

Website

The Berkeley Electronic Press has provided me with a website on which to publish items from the popular press, unpublished research and such other scholarly works as I wish. It can be accessed at

www.works.bepress.com/richard_philp

2nd draft

**ANALYSIS OF TOXICOLOGY STUDIES WITH
LBAM AND RELATED LEPIDOPTERAN
PHEROMONES**

**Prepared by Richard B. Philp, D.V.M., Ph.D., Emeritus
Professor of Pharmacology and Toxicology, The
University of Western Ontario**

Preamble

The light brown apple moth (LBAM) is an invasive pest with the capacity to damage an extremely wide range of important agricultural crops. Its control is therefore critical for economic reasons and to protect the food supply. One way to do this is to employ pheromones (airborne hormones) and their synthetic counterparts (semiochemicals) that act as sexual attractants to male moths. Some of these are quite specific for a single Lepidopteran (moths and butterflies) species and others work for several, closely related ones. Chemically they are classified as tetradecenyl (14 carbon-chain) acetates. By flooding an area with these pheromones it becomes impossible for the males to home in on females and complete the breeding cycle. The hoped-for result is a drastic reduction in the moth population. These agents are attractive due to their very low acute toxicity by comparison with conventional insecticides and their short biological half-life, the result of photo-oxidation and enzyme destruction. The mode of application, however, varies widely. There is little concern with the use of slow release baits placed in numerous locations within the target area, but the use of aerial spraying in urban centers raises legitimate concerns over the safety of humans within the area as well as concerns regarding the environmental impact.

Two commercial products are available for use. Check®Mate OLR-F is a pheromone attractant for a family of leaf-roller moths and to LBAM. Check®Mate LBAM is specific to the LBAM. The USDA Environmental Assessment document (2007) states that the latter will be used when available.

Analysis of available data

One of the major documents provided to me in relation to the aerial spraying of these pheromones is the U.S. Department of Agriculture report entitled "Treatment of Light Brown Apple Moth in the Seaside Area of California: Environmental Assessment, July, 2007." Three references were provided in this document purporting to provide toxicity data relevant to human exposures. Each of these will be examined in turn.

DOCUMENT A. OECD 2002. OECD Series on Pesticides. #12. Guidance for registration requirements for pheromones and other semiochemicals* used for arthropod pest control. 25pp (Environment Directorate, Organization for Economic Cooperation and Development.)

*N.B. Semiochemicals are synthetic pheromones chemically indistinguishable from their natural counterparts.

This document contains some interesting statements. In discussing the safety of these agents relative to non-target organisms, their volatility is cited as a factor contributing to their safety.

Page 12, bullet 4 states that "Individually placed dispensers generally give season-long control, while broadcast formulations are usually applied at lower rates more than once in a season."

Comment: This clearly indicates significant advantages to the bait/dispenser approach.

Page 13 bullet 1 states that “Semiochemicals are **generally assumed** to dissipate rapidly in the environment...”

Comment: This hardly seems a ringing testimony to their short biological life.

References to toxicity data appear first on Page 14. It begins with the statement (bullet 1) that “The US EPA, Canada’s PMRA and the European Union’s regulatory authorities have received no reports of adverse effects to human health or the environment associated with semiochemicals registered for use in mating disruption of arthropods and other applications. Most are SCLPs”. (SCLP = semiochemical lepidopteran pheromone.)

Comment: No mention is made of the method of application used in these situations. It seems very unlikely that aerial spraying was used, else much more would have been made of the lack of adverse reactions in humans.

Page 14 bullet 2 reviews the acute mammalian toxicity studies and concludes that acute studies indicate low toxicity by the oral, dermal or inhalation routes, and no evidence of mutagenicity in the Ames Salmonella test. There was mild skin and eye irritation.

Comment: These conclusions are correct but acute toxicity studies conducted over a very short time span (hours or days) have little relevance to the potential for adverse reactions when repeated exposure take place over several months or years.

Page 14, bullet 4- Results of two sub-chronic studies in rats are cited. In one¹, rats were fed a high dose (up to 1 gm/kg) of “a commercial blend of branched acetates with an aliphatic chain length of between C₁₀ to C₁₄ for 90 days.” The Other study² was a developmental study in which pregnant rats were exposed by inhalation to unbranched primary alcohols with chain length C₈ to C₁₀. No developmental defects were observed in the fetuses. The OCED document states, regarding the oral study¹, that “The results indicated that no significant signs of toxicity other than those expected with longer-term exposures to high dose of a hydrocarbon, namely, histopathologic evidence of nephropathy in males and increased liver and kidney weights in both sexes.”

Comment: The only longer-than-acute inhalation study referred to in the OECD document is the one by Nelson *et al*². It looks at the behavioral and developmental toxicity of a series of industrial alcohols. It was necessary to access the original paper to obtain more details of this report. These alcohols were administered by inhalation for 7hr/day on days 1-19 of gestation. This

short exposure period could hardly be taken as evidence of the safety to humans of multi-month/year exposures to aerosols. Moreover the extrapolation of results from a group of industrial alcohols, including methanol and ethanol, to insect pheromones involves a breathtaking leap of logic and self-deception. Further, the tridecenyl acetates used in the Daughtrey study¹ are not the tetradecenyl acetates of the pheromones in question.

THIS STUDY BY NELSON *ET AL.* APPEARS TO BE THE ONLY PURPORTED EVIDENCE OF THE SAFETY OF EXPOSURE TO THE PHEROMONE AEROSOL CAPSULES LISTED IN THIS OECD DOCUMENT. NEITHER THE CHEMICALS USED NOR THEIR PHYSICAL STATE (VAPORS) IS RELEVANT TO THE QUESTION OF LONG TERM, REPEATED EXPOSURES OF HUMANS TO PHEROMONES OR SEMIOCHEMICALS IN MICROCAPSULE FORM SPRAYED FROM AIRCRAFT. IT IS INTERESTING TO NOTE THAT THE TITLE OF THE PAPER (SEE 2 BELOW) WAS OMITTED FROM THE CITATION IN THE REFERENCES IN THE OECD DOCUMENT. THIS COULD HAVE BEEN AN OVERSIGHT, OR IT COULD INDICATE THAT THE AUTHORS OF THE OECD DOCUMENT DID NOT READ THE ORIGINAL ARTICLE, OR IT COULD HAVE BEEN LEFT OUT TO OBSCURE ITS LACK OF RELEVANCE.

1. Daughtrey WC, Smith JH, Hinz JP, Biles RW. Subchronic toxicity evaluation of tridecenyl acetate in rats. *Fundam Appl Toxicol* 14(1): 104-112, 1990.
2. Nelson, BK, Brightwell WS, Krieg EF Jr. Developmental toxicity of industrial alcohols: a summary of 13 alcohols administered by inhalation to rats. *Toxicol Indust Health* 6(3-4): 373-387, 1990.

DOCUMENT B. U.S. EPA Office of Prevention: Pesticides and Toxic Substances. Reregistration Eligibility Decision, Tridecenyl Acetates. EPA 738-R-96-021. 1996

The toxicity data referred to in this document relate entirely to the use of the sexual attractant pheromones tridecenyl (not tetradecenyl) acetates to disrupt the mating behavior of tomato pinworms. It refers to "technical grade active ingredients or TGAIs" (the pheromones) that may be encapsulated in beads, embedded in polymeric fibers or contained in solid polymeric matrix dispensers. It notes that the encapsulated beads or fiber embedded TGAIs can be applied as sprays although no mention of aerial spray application is made. Mention is made to the low acute human toxicity and short half-life but no references or specific data are provided.

Comment: None of this information is especially relevant to the aerial application used in the Monterey situation. Under the Environmental Hazard paragraph however (page 4), the following statement appears.

“The following environmental hazard statement must appear on the labeling of all products containing tridecenyl acetates: ‘Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the high water mark. Do not contaminate water when disposing of equipment wash water or rinsate’. This statement no doubt relates to the demonstrated toxicity to aquatic and marine species of these agents (see below).

Given the geographic nature of the Monterey Peninsula the aerial application would appear to constitute a significant environmental risk.

DOCUMENT C: Weatherston I, Stewart R. Regulatory issues in the commercial development of pheromones and other semiochemicals . Use of pheromones and other semiochemicals in integrated production. IOBS* wprs Bulletin 25: 1-10, 2002.

*This should be IOBC, the International Organization for Biological and Integrated Control of Noxious Animals and Plants. West palaeartic regional section.

This document reviews a number of factors relating to biological pest control agents. In comparison to the United States, the European Community has approved far fewer agents and Finland, Sweden, Denmark, Ireland, Belgium and the United Kingdom have not approved any pheromone/attractants (as of 2002). The authors attribute the much lower approval rate to “...the alarming trend of almost universal adoption of the Precautionary Principle in Europe in regard to the use of any new technology, process, chemical or any new technology whatsoever.” (page 9, para 3).

Note that the authors do not define “area-wide”, which could refer to either aerial or ground spraying. The authors review acute toxicity data for some avian species and fish (bluegills, rainbow trout) as well as the common water flea *Daphnia magna*. They note the susceptibility of aquatic species.

Comment: Once again, this toxicity review seems to consist of hopeful statements not supported by any hard evidence. It contains statements such as “In the U.S. the regulatory agency believes that with the majority of pheromones there is no evidence of risk when the use does not exceed 150 gm of active ingredient per acre per year.” And “while area-wide use of semiochemical products would generally lead to a greater exposure than use in traps, such exposure is likely to be insignificant.” (page 5, last para). The authors further conclude “the burden of demonstrating that use is safe or will not cause unreasonable effects on health and the environment should be

significantly less than for conventional chemical insecticides.”(page 6, last para)

Toxicity studies do not normally conclude that a substance is believed to be likely safe. I cannot imagine any pharmaceutical product being approved on such a basis, and it hardly seems a compelling reason to allow less rigorous safety testing. One wonders whether trained pharmacologists or toxicologists were involved in the toxicity testing.

Other Toxicology Studies Taken from the Scientific Literature

1. Beroza M, Inscoe MN, Schwartz PH Jr, Keplinger ML, Mastri CW. Acute toxicity studies with insect attractants. *Toxicol Appl Pharmacol* 31: 421-429, 1975.

This is one of the earliest toxicology studies in this field. The authors examined the acute toxicity of a number of insect attractants including one for the gypsy moth. The authors generally found low acute toxicity for the agents tested but noted the higher sensitivity of rainbow trout and bluegills.

2. Abdel-Hgani SB, Martinez-Lopez E, Perez-Perttejo Y, et al. Cytotoxicity and mutagenicity of four insect pheromones in CHO-K1 cells. *Bull Environ Contam Toxicol* 73: 963-970, 2004.

The authors studied the *in vitro* toxicity of four lepidopteran pheromones using several strains of *Salmonella typhimurium* (as in the Ames test) and the mammalian cell culture type CHO-K1. The authors found no evidence of mutagenicity in the Salmonella test but did find significant cytotoxicity in the cell culture test. They proposed that the safety of these agents was dependent in large part on their high protein-binding propensity. The authors refer to a previous study from their laboratory that reported similar cytotoxicity of other pheromones. The lack of mutagenicity has been reported by several laboratories.

3. Rosa E, Barata C, Damasio J, Bosch MP, Guerrero A. Aquatic ecotoxicity of a pheromonal antagonist in *Daphnia magna* and *Desmodesmus subspicatus*. *Aquat Toxicol* 79(3): 296-303, 2006.

Moderate toxicity was observed for this pheromone on these aquatic organisms and the authors express concern for their effects in the aquatic environment.

Comment: The cytotoxicity (cell poison) effect observed with several pheromones is of concern. If the authors are correct in surmising that protein binding is an important protective mechanism, given their absorbability through the skin, vulnerable populations with pre-existing

medical conditions could be at increased risk.

One additional document was obtained from the internet by this reviewer. This is the U.S. EPA document "Lepidopteran Pheromones: Tolerance Exemption". (Federal Register: Aug. 30, 1995, Vol. 60, # 168). This document "...establishes an exemption from the requirement of a food tolerance for residues of certain Lepidopteran pheromones resulting from the use of these substances independent of formulation, mode of application or physical form or shape with an annual application limit of 150 gm per acre for pest control in or on all raw agricultural commodities" (page 1). While this statement would appear to include aerial spraying in the exemption, a subsequent statement in the document contradicts this. On page 3, para 3, it is stated that "For pheromone products, especially those directly applied to food, one problem has been a lack of subchronic toxicity studies and an estimate of the actual pheromone residues occurring with use. Some pheromone uses in solid matrix dispensers have been registered based on the low probability of exposure justifying the waiver of the subacute toxicity studies, namely the 90 day-feeding, the developmental toxicity and immunotoxicity studies. **However, the Agency has held that sprayable formulations or other modes of application that may increase the likelihood of human exposure would still require the subchronic toxicology studies.**"

This reviewer has found no evidence that such studies, appropriate to aerial spray application, have been conducted.

The waters are further muddled in the following paragraph (II. Human Health, Page 3). To quote, "Data has been submitted to date on compounds *similar in structure* (my italics) to the Lepidopteran pheromones and published in the peer reviewed, public literature. The information submitted covered compounds that were from six to sixteen carbon, unbranched alcohols acetates and aldehydes. Since the Agency is basing this tolerance exemption on chemical structure, it is relevant to consider the available subchronic toxicity for this group. The results given in these literature reports indicate that there is no significant acute toxicity associated with the primary alcohols, acetates or aldehydes mentioned."

Although no references are provided, this quotation would appear to refer to the published papers by Doughtrey *et al.* and by Nelson *et al.* discussed above. To reiterate, the results of toxicity studies on part of a chemical structure cannot be extrapolated to the whole chemical structure, and oral or vapor modes of administration are not representative of microcapsules in aerosol application.

GENERAL CONCLUSIONS

Upon reviewing several government documents and a number of independently published papers, it became apparent to this reviewer that no chronic toxicity study has been conducted in a mammalian species by any route of administration and certainly not involving exposures to the product to be employed by the method of application (aerosol spray of microcapsules). Claims of safety are based on extrapolation from acute toxicity studies and one sub-acute, 90-day study that employed the oral route of administration. These are no guarantee that longer-term, repeated exposures of humans are without risk. A chronic toxicity study of at least 90 days and preferably six months duration, employing daily exposure to aerosol of the product in question (Check®Mate) at a high exposure level is required. It is customary in such studies to use a much higher exposure level in order not to miss adverse reactions that might occur too infrequently to be detected at lower exposures. Using the intact product addresses questions of the safety of so-called "inert" ingredients, the chemical nature of which is not available to the public.

In none of the documents discussed above, including the USDA environmental assessment, is there any mention of previous experience with aerial spraying of populated, urban areas. If one wishes to convince the populace of the safety of such a practice, it would seem obvious that presentation of past experiences with it, documenting a lack of adverse reactions in the exposed population, would be key evidence. Previous efforts to control LBAM in the treatment area employed ground application techniques. Pheromone baited traps were placed throughout the State of California to monitor the moth population and distribution. Isolated populations in Napa and Oakley were treated using ground equipment with *Bacillus thuringiensis kurstaki* (Btk) (USDA Environmental Assessment, 2007, p2, para 2). This is a bacterial product that attacks the early larval stages of most lepidopterans.

There is ample evidence that many pheromones and semiochemicals possess significant toxicity for aquatic species. This suggests that aerial spraying carries an increased environmental risk given the difficulty in confining the spray to the target area.

In summary, the USDA and EPA documents are filled with contradictory statements regarding the toxicity testing of pheromones, inappropriate extrapolations from irrelevant toxicity studies, and are suggestive of a poor understanding of basic pharmacological and toxicological principles.

RECOMMENDATIONS

Since the decision to use aerial spraying as the method of application appears to have been made entirely on economic grounds, the decision should be revisited given the lack of adequate evidence for its safety in the long term. Either

ground-based methods of application should be employed or an adequate chronic toxicity study should be conducted. Ground-based technology has the added advantage of posing less risk to the environment.