
**California Alliance to Stop the Spray (CASS)
Santa Cruz, CA**

December 31, 2007

Introduction

The California Alliance to Stop the Spray (CASS) consists of organizations, health professionals, and individuals who share the same common goal of opposing the spraying of residential communities with pesticides without representation and consent. Our collective concern has arisen out of the fact that the LBAM eradication program utilizes a aerosol pheromone-pesticide spray that has not undergone formal safety testing by either federal or state agencies, that the spray has never been sprayed on humans before, that the end goal of eradication will likely not be accomplished, and of particular concern, are the current lack of monitoring and oversight of potential acute and long-term adverse effects due to the spray. This communication is supported by the assigned organizations and individuals.

Organizational Supporters

Citizens For Health
Soquel, CA

LBAMSpray.org
Santa Cruz, CA

Pesticide Watch
Education Fund
Sacramento, CA

Stopthespray.org
Carmel, CA

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To: Rama Khalsa
Health Services Agency Administrator
Santa Cruz County

January 2, 2008

Dear Dr. Khalsa,

The individuals and organizations represented on this communication are writing in regards to the Light Brown Apple Moth (LBAM) eradication program initiated by the California Department of Food and Agriculture (CDFA). We are specifically concerned that Santa Cruz County Health Services Agency (HSA) lacks any process for a formal post spray-related adverse effects data collection system. It is also our belief that Santa Cruz County health care providers should be better informed of the potential for adverse effects of the pesticide-pheromone spray. We feel that a formal process for collecting data and educating the public, as well as health care providers is especially important for the reasons stated below. For your consideration, we have provided documentation supporting our reasoning.

1. The spray being administered was exempted from formal safety evaluations by the Environmental Protection Agency (EPA) and was only approved for use under an agricultural emergency declaration in the State of California; neither short- or long-term safety of this aerosol pheromone-pesticide spray has been sufficiently establishedⁱ;
2. There is data establishing that the disclosed ingredients in the LBAM spray are potentially carcinogenic, mutagenic, teratogenic, hepatotoxic, and tumorigenic even at dilute concentrations (see supporting data attached)ⁱⁱ;
3. A complete listing of the ingredients of the spray solution, and the concentrations to which residents will be chronically exposed has not been fully disclosed making an independent assessment of safety impossible;
4. A large percentage of the post-spray adverse effects reported by individuals in Monterey and Santa Cruz Counties are consistent with the known adverse effects associated with the spray or its ingredientsⁱⁱⁱ (see supporting petition and comments attached);
5. Santa Cruz county residents will be chronically exposed to the LBAM spray solution continually for a minimum period of 2 years and a State-projected period of from 3-10 years;
6. The contents of the spray are designed to last from 30-90 days and spraying will continue every 30 days. This process will result in greater and greater overlapping concentrations of pesticide solution and continued exposure that is greater than the individual exposures estimated by the State;
7. No data exist of the potential adverse effects of acute or chronic exposure of this spray on pregnant women and children in schools and day care centers within the spray zones;

8. County physicians are not sufficiently aware that this spray solution has never been applied to residential areas, that formal safety studies were not conducted, and that the solution consists of potentially toxic compounds in addition to the pheromones, which many believe are benign.

The CDFA began this program on September 9th of this year by spraying residential areas of Monterey County with the pheromone-pesticide Checkmate LBAM^{iv} (see attached). After the first two sprays, there were more than 200 reported cases of adverse health reactions to the spray in Monterey County. To date, there have been more than 650 adverse effects reported for residents in Monterey and Santa Cruz Counties. Underreporting of any adverse event is typical among populations. In medicine, for example, it has been estimated that as few as 10% of adverse effects to prescription medicines experienced are reported by physicians^v. The Department of Pesticide Regulation's own Consensus statement (attached) similarly states;

"DPR's surveillance system, like others, under detects pesticide illnesses for various reasons, including that pesticide illnesses may mimic other illnesses and that physicians and patients may not ascribe symptoms to pesticide exposure."

Moreover, relatively minor, transient symptoms triggered by the spray would similarly go underreported. Therefore, the actual number of adverse events experienced by residents is undoubtedly significantly higher.

While the CDFA has stated that the formula Checkmate LBAM is safe for human contact, the CDFA based this determination on a review conducted by the EPA, who in turn based their determination on data obtained from New Zealand. This pheromone-pesticide solution has never been sprayed over residential areas in New Zealand, or any other country, making any extrapolation of safety from New Zealand data inappropriate and irrelevant. Neither the CDFA nor the EPA conducted any independent safety evaluation. A formal, independent safety review is usually required by EPA but was exempted under the declaration of emergency. Most of the CDFA's communications regarding the safety of this material are focused only on the safety of the pheromone portion of the spray solution, not the complete solution that is being applied to residential areas. Also, varying compositions of this solution are used making any extrapolation from any other data completely irrelevant. Some of the non-active ingredients listed as "other" or "inert" are ranked by the Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) as category 3 hazards ("major injury likely unless prompt action is taken and medical treatment is given.") (See Appendix 2). This does not appear to be common knowledge among health officials or health care providers.

The State has declared that the concentrations of the spray to which residents would be exposed are sufficiently dilute so as not to represent a public health risk. However, as the supporting data provided shows, toxicity of some of the compounds in the spray can occur even in dilute quantities, and for some, the degradation compounds are more toxic than the parent compounds. Still other of the compounds can become toxic over time. As previously noted, the exact concentrations of compounds within the

LBAM spray are proprietary information and so the actual concentrations delivered in the spray solution cannot be assessed, nor their safety independently evaluated.

In addition to the potential for toxicity directly associated with the Checkmate portion of the LBAM spray, there are unknown safety consequences potentially associated with the delivery system, the safety of which has not been evaluated at all. Of greatest concern is the lack of safety data on one class of carriers used in the spray known as microcapsules and surfactants. Regarding the microcapsules, a group of researchers at the University of California at Davis recently published a study the conclusion of which revealed that the microcapsules in the LBAM formula range in size of from 10-190 microns (Werner et al 2007)^{vi}. The American Lung Association considers aerosol particles of 10 microns in size as particulate pollution (known as PM10) that contribute to a host of adverse health conditions, mostly, but not exclusively, respiratory in nature. The majority of adverse effects currently reported for the Checkmate aerial spray were respiratory or mucus membrane related (see attached DPR consensus). The CDFG in their Consensus Statement on the Human Health Aspects^{vii} of the microencapsulated spray estimated the size of the microcapsules at a minimum of 25 micron, and because of this, performed no safety or toxicity studies on the potential for the spray to cause respiratory effects. The same document reports that respiratory symptoms are plausible, even at their mistaken estimates of the 25 micron particle size, suggesting that the incidence of respiratory disturbances will be much greater than estimated by CDFG.

Regardless of whether or not one personally believes that pheromone-pesticides are safe, the fact that this particular pheromone-pesticide solution has never been sprayed on residential areas before now, should raise substantial concerns for county health officials. Monterey and Santa Cruz Counties are testing grounds for this material, and there is currently no program in place to monitor adverse reactions if they were to occur.

In addition, many city and county physicians have been lulled into a false sense of safety in the belief that the pheromone portion of the spray presents no harm, while being completely unaware of the potential adverse effects that can be associated with other compounds in Checkmate and in the delivery system. Residents experiencing post-spray symptoms have reported meeting with physicians who have been unwilling to fill out the proper adverse effects reporting forms because these physicians were apparently unaware that the Checkmate aerial spray contains anything other than pheromones. Under these circumstances, we concur with the opinion of the Department of Pesticide Regulations who in their communication of November 16, 2007^{viii}, stated:

“A series of actions to ensure proper collection, review, and coordination of health complaints is also recommended. Air sampling should be considered to investigate the contribution of the aerially released microcapsule particles to the overall ambient air particulate load. A well-designed, formalized study and tracking program that looks at a number of factors including, but not limited to, both long- and short-term health outcomes, exposed and unexposed persons, the potential effects of stress, and outreach methods on illness complaints would be needed to begin to properly address the question of causality.”

Of additional concern are the surfactants that are present in the LBAM solution (e.g. tricapyryl methyl ammonium chloride). Surfactants are substances similar to detergents and soaps used to reduce the surface tension of liquids and, in the LBAM solution, are present to ensure a smooth flow of spray through the spray nozzles. The lungs are especially affected by surfactants as pulmonary surfactant is an inherent part of normal respiration. However, the lungs must maintain a normal balance between pulmonary surfactant and surface tension. Surfactants were associated with the death of hundreds of seabirds, which occurred immediately after the Santa Cruz spray. The association of surfactants with the dead birds is likely causative as many of the birds were found to be stripped of their oils, which led to their drowning. While the contribution of the surfactants and the dead birds is different than what would likely be experienced in humans, the stripping of the oil in the dead birds strongly suggests exposure to surfactants at concentrations that are great enough to influence the delicate balance of the human respiratory system. This can result in a two-fold problem; endogenous systemic effects in individuals susceptible to minor changes in respiratory surface tension and greater absorption of exogenous particles that can trigger allergic responses in susceptible individuals. Despite these associations, state and federal agencies have yet to perform a single respiratory toxicity study, and currently have stated there is no intention to do so.

Of equal importance, the County of Santa Cruz is attempting to document any Checkmate LBAM related illnesses for its impending court case and request for a temporary restraining order against future sprayings, at least until an Environmental Impact Review can be conducted. Without a formal program in place within HSA, this cannot be done. We believe HSA should work in cooperation with the city and county governments who are working to safeguard the public's health.

As citizens concerned about our health, we believe that any material that is to be aerially sprayed on residential areas needs to be shown to be safe before application. We find it incredulous that the State of California would require citizens to carry the burden of proof in showing this material to be potentially harmful. Rather, we believe it is the responsibility of State and/or Federal agencies to prove this material, in the complete form in which it will be dispensed, is safe prior to the spraying of residents, including children, pregnant women, and the elderly. We believe it is the responsibility of State and/or Federal agencies to prove this material, in the complete form in which it will be dispensed, is safe prior to the spraying of areas such as playgrounds, backyards, parks, etc. where people will inevitably come into direct contact with the pesticide. We also believe it is the responsibility of HSA to question and review the assertions of the safety of such materials rather than defer this to others whose primary focus may be incongruent with the mission of HSA.

We respectfully ask that you please recognize that the concerns we raise are legitimate, and that a focused program is needed to ensure that the public's health is truly being protected through the monitoring and tracking of potential post-spray adverse effects. The State needs this level of feedback in order to honestly assess the safety of what they are doing. Moreover, we feel that it is important for county physicians to be made aware that the material being sprayed is not simply a pheromone, as has been widely represented, but that it contains other compounds of unknown safety, and microcapsules whose particle size may result in an increase in respiratory complaints, especially during times of spraying. Physicians and county health providers should also

be made aware that, in point of fact, this material has never been sprayed on residential populations and that formal safety evaluations that would have normally been conducted by EPA were obviated due to the declaration of emergency. This background knowledge may make physicians more aware of the potential for spray-related adverse effects, and more likely to report them.

Ms. Khalsa, we believe that you and Santa Cruz County HSA are committed to doing everything in your power to make sure that the people, whom you are entrusted with caring for, are indeed cared for. The mission statement for HSA illustrates this commitment and we include it here in hopes that we may partner in its fulfillment.

“The Santa Cruz County Health Services Agency exists to protect the public health of Santa Cruz County and to help assure residents access to medical care and treatment. The ultimate goal of the Health Services Agency (HSA) is healthy people living in healthy communities. HSA is responsible for promoting community health in the public and private sectors....

HSA is committed to protecting public health in the following ways... Advocacy for expanding health coverage and environmental protection and securing the resources for HSA and other health providers to carry out the mission.”

We believe the assertions we have made accurately reflect the state of the scientific data and justify the recommendations put forth. On behalf of the individuals and organizations that support the submission of this communication, we respectfully ask that you please respond to the questions below so we may know what programs are to be put in place and where adequate programs are lacking.

We have also enclosed a copy of a petition that was signed by more than two thousand residents of Monterey and Santa Cruz Counties. We respectfully request that you read all of the comments in the petition, as well as the other enclosures we have provided. Please take the time to review the data provided. We believe that if you do this sincerely, you will reach the same conclusions that we have and will agree that it is appropriate to have a mechanism for monitoring and tracking potential post-spray adverse effects, and that local health care providers need to be better informed.

Citizens Health Concerns

Concerned citizens of Santa Cruz County respectfully request that HSA respond to the following questions:

1. What plan does HSA have to notify Santa Cruz residents of the impending spray?

2. What plan does HSA have to caution Santa Cruz residents of potential adverse effects of the spray?

3. What plan does HSA have to advise Santa Cruz residents what to do and where to go in the event that they have an adverse reaction to the spray?

4. What plan does HSA have to do outreach to county health care providers so they will know how to identify, treat, and document potential adverse effects due to the spray?

5. What plan does HSA have to ensure that all Santa Cruz residents– even those who do not qualify for county health care, but are too poor to afford adequate health insurance – will be treated if harmed, and that their experiences will be appropriately documented?

6. How may Santa Cruz residents assist HSA in fulfilling its mission in this regard?

As the next spray is tentatively scheduled for late February or early March, time is of the essence. We therefore would appreciate a response by January 15, 2008 or sooner.

Sincerely,

Zelda M. Lackner, Esq.

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- ⁱ Appendix 1: EPA Grants Emergency Approval of Checkmate: no formal safety studies conducted.
 - ⁱⁱ Appendix 2: Safety Concerns of Checkmate Ingredients. Material Safety Data Sheets (MSDS) & Review of MSDS.
 - ⁱⁱⁱ Appendix 3: Review of Post-Spray Adverse Effects in Monterey and Santa Cruz Counties: Petitions and Comments.
 - ^{iv} Appendix 4: Label of Checkmate LBAM-F and Ingredients of Checkmate OLR-F.
 - ^v Appendix 5: Heeley et al. 2001. Prescription-Event Monitoring and Reporting of Adverse Drug Reactions. *Lancet*. 358: 1873-73.
 - ^{vi} Appendix 6: Werner I, Deanovic LA, Markiewicz D. 2007. Toxicity of checkmate® LBAM-F and *Epiphyas postvittana* pheromone to *Ceriodaphnia dubia* and fathead minnow (*Pimephales promelas*) larvae. Aquatic toxicology laboratory. University of California, Davis.
 - ^{vii} Appendix 7: Department of Pesticide Regulation; Consensus Statement on Human Health Aspects of the Aerial Application of Microencapsulated Pheromones to Combat the Light Brown Apple Moth. October 31, 2007.
 - ^{viii} Appendix 8: Department of Pesticide Regulation; Communication Nov 16, 2007.