

Californians for Alternatives to Toxics
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Jim Rains, Staff Environmental Scientist
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814
jrains@cdfa.ca.gov

Re: Scoping Comments for the Draft Programmatic Environmental Impact Report for the
Light Brown Apple Moth Eradication Program

Dear Mr. Rains,

I write on behalf of Californians for Alternatives to Toxics (CATS), a public interest organization with members who reside in the areas where pesticides and pheromones are or may be applied in the State's attempt to eradicate the Light Brown Apple Moth, hereafter referenced as "LBAM." CATS has advocated for the reform of pesticide use in California since 1982 and has successfully litigated the proposals made by the Department of Food and Agriculture regarding the Apple Maggot Fruit Fly and the Glassy-Winged Sharpshooter.

Our members depend on the health and productivity of viable ecosystems in California for our livelihood, health, culture, and well-being and are concerned about the impacts of the program on human and environmental health within these ecosystems.

We do not support and are opposed to mass applications of materials of any kind to control an unwanted pest, particularly aerial application.

Failure of Past Eradication Programs to Eliminate the Pest

Control is likely to be the best you can hope for, given the long history of California's failed responses to introductions of pests. Eradication is a myth that compels the state to pursue a program that puts at risk human populations and the environment, both of which are already suffering under the burden of the cumulative impacts of assaults of toxic exposure presented on every front. This is done in the interest of protecting agriculture, an economic interest that, while critical to the State's economic viability, has long been in need of a vast reorganization to reduce its vulnerability to introduced pests.

In 1989, UC California professors Donald Dahlston and Richard Garcia published Eradication of Exotic Pests: Analysis with Case Histories, (Yale University Press), a compilation of expert studies of programs to eradicate invasive insects that create problems for commercial agriculture, forestry and health. In it, the authors warn that eradication programs are highly institutionalized, very costly, and frequently controversial because of increasing public concern about the use of toxic chemicals, particularly in densely populated areas. The authors recommended that more time and effort be devoted toward biological and ecological research on invading species and placing greater emphasis on using techniques that have long-term economic benefits and are not environmentally disruptive. Our concern is that, despite the warning of the leading experts in the field, these steps have not been taken some twenty years later. In essence, the State has taken the position, instead, of replacing one set of chemicals for another, and called that "progress."

Agricultural Costs are Inappropriately Out-Sourced to Non-Agricultural Areas

Programs such as this one for LBAM and its predecessors Apple Maggot Fruit Fly, Mediterranean Fruit Fly (Medfly), the vector for Curleytop Virus and other pests have almost always failed to eradicate the pest. What's more, agriculture as it is practiced in most of California is vulnerable, weak and unprepared to

defend itself against introduced pests, thus agriculture puts off to consumers the cost of doing business. The State pays for the pest "eradication" program with tax dollars while Californians pay, again, with risk to their health and loss of quality in their environment.

The broadcast application of pheromone, Bt and even Spinosad, plus adjuvant materials used to boost efficacy, poses significant risk. The argument that it is not advisable to broadcast spray commercial agricultural fields because it is not possible to contain most materials is gaining ground, in part due to recent findings by the National Park Service and the US Geological Service of pesticide residues in pristine areas due largely to regional agricultural activities.

To treat population centers as if these are not different from already risky agricultural operations is not logical or acceptable, a fact that the California Certified Organic Farmers has thankfully realized. The risk factor that makes some chemicals acceptable for commercial organic production is not transferable to situations where human populations or environmental resources already under pressure from an accumulation of adverse environmental inputs will be exposed.

It's Logical and Fair to be Concerned About the Unknown: the Precautionary Principle

In the process of pursuing eradication in previous efforts, program activities have exposed human populations and the environment to toxic chemicals we were told at the time were "safe" and which we now know wreak havoc in humans and the environment.

Take, for example, the use of the insecticide malathion in the State's attempt to eradicate the medfly in the late 1970s. Marc Lappe, then the director of the newly formed California Hazard Evaluation System, advised then-governor Jerry Brown to not allow the aerial application of malathion in population centers due to Dr. Lappe's concern about exposure of human populations to the chemical. The chemical ultimately was used, millions of people were exposed to malathion as they slept and went about their daily lives and the State assured them that no significant harmful effects would occur. Malathion was considered by many in agriculture and the State government to be a much more benign, even safe alternative to DDT and other known hazardous chemicals. However, since the time when the State made assurances of malathion's safety when broadcast sprayed in population centers, more study has revealed the collateral damage inflicted by malathion. We now understand better the endangerment of human life and the environment that came with the use of that chemical in an attempt to eradicate a pest that's still bugging us in California.

For malathion, it is now known that its toxicity appears to be strongly linked to the amount of protein in the diet. As protein intake decreases, malathion is increasingly toxic. Malathion has been shown to have different toxicities in male and female humans due to metabolism, storage and excretion differences between the sexes. For humans, the lowest dose at which lethal effects have been observed was nearly three times higher for males than for females. The chemical has far greater dose effects to pre- and post-natal children than to adults; these effects may also vary widely among ethnic groups. Malathion has produced detectable mutations in three different types of cultured human cells, including white blood cells and lymph cells. Evidence now available supports listing malathion as a likely human carcinogen. What's more, we now have learned that, once in the environment, malathion breaks down to the chemical malaoxon, which is 77 times more toxic than malathion.

These and other serious effects of exposure to malathion were not known or well researched when it was sprayed over the homes, schools, workplaces, streets and cities of millions of people in an attempt to eradicate the Medfly in the late 1970s and into the 1980s. A similar problem exists now for the pheromone products proposed for use in the LBAM program, and already used, in that too little is known now about collateral damage caused by the chemicals for an adequately informed decision to be made.

A rational response to the introduction of a harmful pest would not include using a pesticide likely, based on history, to cause problems not yet known or understood due to inadequate scientific study. The affected human populations are our own, they are Californians. Our decisions need to be protective. Health and environmental problems inflicted by the State will in some way eventually haunt the State, even if the effects can never be adequately quantified.

We recommend that the State abide by the Precautionary Principle in light of the history associated with the development of information over time about the true toxicology of chemicals and the current paucity of information available about the pheromones, in particular, proposed and already used for the LBAM program.

Chemically Sensitive Populations

The risks to individuals regarding their response to exposure to chemicals is affected by the wide variation of human vulnerability, with influencing factors ranging from gender to age, from health status to ethnic origin and other variables.

In addition to variability that can be expected among humans regarding their response to chemical exposure, there is the additional factor of chemical sensitivity that arises from acute or chronic exposure to environmental elements, usually those generated by industrial activity but also from other sources.

In a survey of Californians conducted for the Department of Health Service's widely regarded California Behavior Risk Factor Survey (BRFS) in 1995 found that 6.3% of the population reported doctor-diagnosed "environmental illness" or "multiple chemical sensitivity" (MCS) and 15.9% reported being "allergic or unusually sensitive to everyday chemicals." Sensitivity to more than one type of chemical was described by 11.9% of the total sample population. Marital status, employment, education, geographic location, and income were not predictive of reported chemical sensitivities or reported doctor diagnosis. Surprising numbers of people believed they were sensitive to chemicals and made sick by common chemical exposures. The homogeneity of responses across race-ethnicity, geography, education, and marital status is compatible with a physiologic response or with widespread societal apprehensions in regard to chemical exposure.

This translates to the potential for widespread adverse response in human populations exposed to pesticides that are broadcast sprayed. In a population area such as Santa Rosa, in Sonoma County, which has a human population of approximately 158,000 within city limits and the very real potential to be a target of aerial pesticide application in an attempt to eradicate LBAM, as many as 19,000, or around 12%, are likely to be sensitive to chemicals. Within this sub-population there will be variables that further influence such standing, such as age, other environmental exposures, gender and ethnicity, and leave a significant number of individuals vulnerable to adverse affects from the broadcast application of chemicals no matter how specific these chemicals are intended or assumed to be.

Environmental Resources at Risk

Recent reports of prescribed and over-the-counter pharmaceutical compounds found in ocean and inland water in California raise particular concern for the potential addition of a pheromone and other pesticides to water resources as a result of the LBAM program. Pheromones, no matter how viewed as specific to a particular species, are still chemicals that elicit a sex hormone response. Chemicals currently used to reduce mosquito populations in an attempt to limit West Nile Virus are growth inhibitors that affect similar hormones, again supposedly specific to particular organisms. Human sex hormones have been found among the pharmaceutical compounds in water, even in sources of drinking water.

Animals and plants struggling to survive in severely impacted ecosystems to which they have evolved over millennia are likely to be exposed to materials broadcast sprayed in the LBAM program. The cumulative effect of the addition of yet another hormone to the environment, or even just another human-made pollutant, could be significant or even deadly. To affect the reproductive ability of a Threatened or Endangered Species is as devastating as killing it outright.

Application Methods are Risky: Mass Spraying, Drift and Uneven Distribution of Material

The LBAM program, as currently proposed, threatens both human and environmental health due in particular to the mass spraying of areas covering many thousands of acres. By our estimate, a single find of LBAM presence that, under the current proposal, would trigger spraying for 1.5 miles radius around the find site would cover approximately 5,000 acres. This is a significant amount of acreage to cover by aircraft, and helicopters operating in the conditions found in population centers are likely to have a less

than accurate spray pattern. Uneven distribution of pesticides will impact some populations and environments to a greater extent than what is proposed and assessed for risk in the current program.

To aerially spray in forests and urban areas from a helicopter risks significant movement of pesticide from the area being sprayed due to the distance between the applicator and the target. Helicopters cannot fly low enough in population centers to prevent drift of the pesticides due to buildings, utilities and other factors. The distance from nozzle to target is widely known to impact drift and affect the even distribution of material. With 5,000 acres being sprayed at any one time, the potential for increased toxicity due to application factors is significant.

In view of these and other concerns, we request that the Department of Food and Agriculture consider the following in its proposed Environmental Impact Report for the LBAM Eradication Program:

- Describe the outcome of past pest eradication programs, and if eradication has been achieved, how that was accomplished, and how that compares with the current effort.
- Include an alternative that requires agricultural interests at risk of loss to help defray costs for the LBAM program and to provide a trust to cover the expenses of impacted humans and environmental resources. For example, the Curly Top Virus Control Program (CTVCP) is supported by an assessment on sugarbeet, bean, melon, tomato and several other crops. Why wouldn't the LBAM program be so supported?
- Describe and analyze the difference between the environment of commercial agricultural sites and urban sites in regard to pesticide application.
- Analyze particularly what's unknown about the chemicals proposed for use, with an emphasis on broadcast application in population centers and how those information gaps will be filled if the proposed program proceeds.
- Include an alternative that incorporates the Precautionary Principal.
- Describe and analyze the variability and chemical sensitivity of humans and the expected percent of Californians vulnerable to adverse response to exposure to the chemicals used in the LBAM program.
- Analyze the cumulative impacts in particular, but not limited to, water quality and wildlife, especially Threatened and Endangered species.
- Analyze the effect of adding another hormone, especially one that affects sexual response, to the environment in light of other hormones now known to be widely distributed.

Please do not interpret these requests as limiting your analysis of the LBAM program. If CDFA is committed to undertaking a truly open process in the spirit of CEQA and not merely performing a *pro forma* ritual, other potential impacts will surface in the form of comments of other interested members of the public, other agencies and experts. Please keep an open mind and provide us, the public, California citizens, residents and taxpayers, with a solid analysis that does not require that we seek recourse before the court in our quest to provide full disclosure and complete participation in the democratic process of making these all-important decisions.

Please contact me if you require further information.

Sincerely,

Patty Clary
Programs and Policy Director
Californians for Alternatives to Toxics