

## **Marin Pesticide Spraying Health Hazard Alert**

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California Department of Food and Agriculture plans to aerial spray a micro-encapsulated pesticide to "eradicate" the Light Brown Apple Moth" (LBAM). The proposed pesticides — "Checkmate LBAM-F or Checkmate ORL-F" — contain a moth synthetic chemical pheromone combined with eight other chemicals in a plastic polyurea polymer capsule. These microscopic capsules ( 25 micron, and breaking down to under 10 micron) would be sprayed over heavily populated areas for 9 months of the year. In Marin they will begin in August 2008, concentrating for the present on San Rafael and south.

Capsules are designed to emit the pheromone over a 30 day period, to be repeated monthly (except winter) for continual saturation for several years. These airborne microscopic particles would drift down and randomly disperse, according to the prevailing winds, to settle on all exposed life, houses, gardens, playgrounds, walkways, etc., and of course be inhaled by all breathing life forms including homo sapiens. Any particle size under 10 micron would reach to the finest lung bronchiolar air exchange units called alveoli. These particles are designed to break down over a 30 day period when exposed; there is no data to know how they will act in human, dog, cat, etc., lungs.

The purpose of this science fact based information release is to inform health care providers so they can make an informed judgment as to what their professional responsibilities should be: and so the general population of Marin County can make an informed decision as to how to best protect themselves, families, friends, and communities, and environment from this unwarranted experimental toxic exposure.

There are many other demonstrated established effective methods for controlling the LBAM, and this factual information can be accessed at "Stop the Spray-Marin". So far there has been no demonstrable crop or plant damage in California from the LBAM.

### **Checkmate Toxicology**

Immediate short term acute health concerns are to be expected from the known toxicology of several of the chemicals in the Checkmate formulation mix and in the polyurea plastic particulate capsule.

Over 643 recorded health complaints were associated with the September, October, and November spraying in Monterey and Santa Clara Counties. These short term complaint symptoms are consistent with known toxicology scientific information of the ingredients of Checkmate (see attached document). These ingredients include irritants, sensitizers, nervous system disrupters, endocrine disruption, allergens, and hypersensitivity induction.

Long term health effects are also of concern due to the known induced mutations and suspected cancer risks of constituent chemicals.

It is also important to include the risks of the polyurea plastic capsules. Industrial production of this plastic uses isocyanate catalysts which can cause serious acute reactive bronchial constriction (asthma attacks) in exposed worker populations.

Glaring deficiencies in the animal toxicology studies are extremely important. There were no inhalation studies. There were no long term or multigenerational health studies done on this brew of toxic chemicals.

### **Population at Risk for Immediate Acute Reactions**

The panoply of symptoms that occurred in the 643 Monterey and Santa Cruz complainants included: asthma attacks, bronchitis, productive pulmonary congestion, shortness of breath, wheezing, coughing, chest pain and tightness, nasal congestion, sore throats, eye irritation, blurred vision, severe skin rashes, sinus bleeding that reflected acute upper respiratory distress, eye, and dermal reactions.

Cardiopulmonary reactions included arrhythmia, and tachycardia. More generalized acute debilitating systemic reactions included headaches, trouble concentrating, dizziness, muscle aches, tremors, gastrointestinal pain, diarrhea, lethargy, malaise, and fatigue. There were frank hormonal disturbances as evidenced by breast symptoms and menstrual irregularities.

Relevant medical histories, current medications, and most important timing in relationship to the spraying will give primary care practitioners the information needed to connect these patients to the pesticide exposure — if primary care practitioners receive and act on this information.

The population most at risk for acute reactions are asthmatics, infants, children, the elderly, patients with borderline cardiopulmonary compensation (e.g. chronic obstructive pulmonary disease, chronic bronchitis, pneumoconiosis, marginal pulmonary vital capacity), congestive heart failure, cardiovascular abnormalities, angina, those with environmental illness, and medically debilitated patients. It is critical that patients with such medical profiles be protected from these life-threatening to them airborne toxic particles.

### **Long Term Health Risks**

Major toxicity concerns go beyond immediate acute effects when the known toxicology profiles of the ingredients (attached) include endocrine disruption, mutagens, suspected carcinogens, and immune system disruptors. Such exposures could well put exposed population at increased risk for diseases later in life, e.g.: hormone disruption (multigenerational), genetic damage, reproductive disorders (spontaneous abortions, infertility, low birth weight newborns, birth defects), developmental disorders, cancers and leukemia, neurological disorders, and immune system dysfunction. Many diseases that fit into these categories are nationally increasing in frequency, and are probably

mainly due to toxic chemical environmental exposures.

Testing thus far by manufacturer and EPA of Checkmate is clearly inadequate to determine increased long term chronic health risks to the general population that would occur in these disease categories from airborne exposures.

### **Discussion and Conclusion**

It has been several months since Monterey and Santa Cruz counties have been sprayed. The federal DFA, state CDFA, and DPR have not implemented or funded a well designed epidemiology study to determine scope and seriousness of the health impact on exposed residents in these two counties. This is far beyond irresponsible, and in fact criminal negligence would be a more appropriate label for the lack of public health follow-up. The longer these necessary public health follow-up studies are delayed, the more critical information will be lost. Health questionnaires administered to all residents could determine the scope and seriousness of all short term and later long term adverse health reactions. Exposed residents should expect nothing less. Any acute reactions or disabilities resulting in medical expenses, disabilities, or loss of income from these exposures should be totally compensated. Federal and state agencies responsible for this spraying decision must take financial and criminal responsibility for adverse impacts to health and environment.

Physicians are legally required to report diagnosed pesticide diagnosis; but in the two sprayed counties there was no systematic notification that included probable short term health reactions sent to health providers, first responders, emergency rooms, or all residents before the September, October, and November 2007 sprayings. This is a shocking disregard of human rights in any democracy.

### **Further Information about LBAM**

Further information about controlling LBAM without spraying the general population can be accessed at the "Stop the Spray Marin website.

### **Further Broad Perspectives on the National Health Impact of Toxic Chemicals**

There are three recent studies of cumulative contamination of our bodies that give relevant information regarding public health impact of toxic chemicals we have all been exposed to — called "body burdens".

The CDC "Third Report on Human Exposure to Environmental Chemicals, 2005.(Access through Goggle)

The recent Environmental Working Group study of toxic chemicals found in fetal cord blood.

A number of studies showing the toxic chemicals found in maternal milk.

Most of the chemicals contaminating the nation's population through food, water, air, soil, and consumer products come from pesticides. Many exposures cannot be measured

in our bodies. There are a variety of other consumer products that are also causing these exposures. It turns out that recent studies of hormone disrupting chemicals show chemical health effects at extremely dilute low levels of exposure — down to parts per trillion in fetuses.

**About the Author**

Lawrence Rose M.D., M.P.H., was the senior Public Medical Officer for Cal-OSHA for 28 years, and in that capacity was for a time assigned liaison for Cal-OSHA to the statewide interagency pesticide advisory committee, (recently retired), and an Occupational/Environmental Medicine practitioner, and part of the UCSF Occupational/Environmental Medicine Department.