



# PESTICIDES IN PARADISE

## HAWAI'I'S HEALTH & ENVIRONMENT AT RISK

### [ KEY FINDINGS ]



**O**N O'AHU, KAUA'I, MAUI, AND MOLOKA'I, chemical and biotechnology companies Monsanto, Syngenta, DuPont-Pioneer, Dow Chemical, and BASF have purchased prime agricultural land, taking advantage of Hawai'i's isolation and year-round growing season, in order to field test crops that have been genetically engineered (GE) to withstand greater applications of pesticides.

As the report details, the onslaught of pesticide-promoting GE crops on the Hawaiian Islands raises three main areas of concern: *the impacts of pesticide exposure on public health, the threat to native biodiversity, and food independence for the people of Hawai'i.*

Our in-depth analysis of pesticide risks and impacts to the communities and environment of Hawai'i revealed the following findings.

### SEED INDUSTRY FOOTPRINT IN HAWAI'I

- ❖ Since 1987 Hawai'i has hosted more cumulative field trials (3,243) than any other state. In 2014 alone, 178 different GE field tests were conducted on over 1,381 sites in Hawai'i (vs. only 175 sites in California).
- ❖ Due to Hawai'i's small size, it has a much higher density of field tests than other states. As a result, more people in Hawai'i live in closer proximity to field test sites than residents of any other state and run a higher risk of experiencing pesticide drift.
- ❖ The seed industry's footprint (24,700 acres) is 72% of the total area planted to crops other than sugarcane or pineapple (34,400 acres).
- ❖ The majority (91%) of the plants being tested are corn and soy—not niche crops such as papaya or banana.
- ❖ Herbicide-resistance was the most frequently tested trait in GE crop field tests in Hawai'i over the past five years. This means that plants genetically engineered in Hawai'i, by and large, are engineered to resist ever greater application of herbicides.
- ❖ Despite claims that the seed industry is a pillar of Hawai'i's economy, it only employed 1,397 workers in 2012, representing just 0.23% of total Hawai'i jobs.

### PESTICIDE USE

- ❖ DuPont-Pioneer applied 90 different pesticide formulations containing 63 different active ingredients on Kaua'i from 2007 to 2012. The company sprayed on two-thirds (65%) of the days over this period and made from 8.3 to 16 applications per application day on average.

- ❖ The third-most frequently applied class of pesticides is also among the most toxic: organophosphate insecticides such as *chlorpyrifos* were sprayed an average of 91 days each year.
- ❖ Restricted Use Pesticides (RUP) sales data for Kaua'i show that 22 RUPs containing 18 active ingredients were applied in agriculture from 2010 to 2012.
- ❖ 81% of RUP active ingredients by weight were applied to corn and 19% to coffee, with negligible amounts used on ornamentals, soybeans, sugarcane, tomatoes, and turf.

## PESTICIDE EXPOSURE RAISES SERIOUS HEALTH CONCERNS

- ❖ In general farmers, farmworkers, pregnant women, and children are at greatest risk: farmers are more highly exposed than the general population; and children are more susceptible to the harmful effects of pesticides than adults.
- ❖ The American Academy of Pediatrics recently published a major report entitled “Pesticide Exposure in Children” that reviewed 195 medical studies; their chief concerns were that pesticides are linked to *childhood cancers, neurobehavioral and cognitive deficits, adverse birth outcomes, and asthma*.
- ❖ In adult populations, pesticide exposure has been linked to Non-Hodgkin’s lymphoma, bladder and colon cancers, Parkinson’s disease, depression, and disrupting our hormonal or endocrine systems.

## REGULATION NEEDED TO ADDRESS PUBLIC HEALTH RISKS

We would all like to believe that the Environmental Protection Agency (EPA) protects us from pesticide harms, but this is often not the case.

- ❖ EPA requires safety testing only on the pesticide product’s active ingredient, even though “inert ingredients” in pesticide formulations can be toxic in their own right, or increase the active ingredient’s toxicity.
- ❖ In a failed attempt to better protect human health and the environment from pesticide drift, EPA proposed improved pesticide labeling in 2001, but has yet to finalize and enact the policy.
- ❖ EPA began to phase-out residential use of the toxic insecticide chlorpyrifos in 2000, specifically to protect children. Yet, rural children remain at risk, as ambient air levels of chlorpyrifos have been found to exceed health standards in agricultural areas.
- ❖ As of 2014, at least nine states had established no-spray buffer zones around sensitive areas such as schools, hospitals, and public parks, and while eleven states have established notification requirements for pesticide applications near schools. These policy actions evince growing awareness of the serious health threats posed by pesticide drift.
- ❖ Residents of three Hawai’i counties have demanded that their local governments take action, under the counties’ authority to regulate agriculture, ensure the welfare of its residents, and fulfill its duty to protect public resources.

Despite making miniscule contributions to employment and the economy, Hawai’i’s pesticide/seed industry occupies significant prime farmland, even as Hawai’i supplies ever less of its food needs. GE seed corn experimentation and production involves heavy, frequent, year-round use of toxic agrochemicals. Pesticide drift threatens both public health and Hawai’i’s incredible biodiversity. Hawai’i’s state officials must protect citizens from the irresponsible practices of agrochemical-seed firms by enacting sensible, prudent restrictions, such as no-spray buffer zones around schools. In the longer term, the state’s agricultural policy must be re-directed from supporting continued expansion of GE seed corn operations towards increasing sustainable local food production, the only realistic means to reverse Hawai’i’s steadily declining food security.