Is aerial spraying vital to the export-earning banana industry?

It has been argued that banning aerial spraying would result to the death of the export-earning banana industry. However, available alternatives may have yet been explored in favor of dependence on chemical sprays.

In November 2001, export-plantation province Bukidnon passed Provincial Ordinance 2001-48, banning the use of aerial spraying in all banana and other agricultural plantations in the province. Four years after the ordinance has been passed, banana plantations in Bukidnon continue to thrive, with alternative pest control methods presumably being utilized.

Why should I be concerned?

The act of releasing toxic chemicals in the air through pesticide aerial spraying is undeniably compromising the safety of people and the environment, not only in the immediate vicinity where aerial spraying happens but also beyond.

In Davao City, pesticide-using plantations have been encroaching on vital upland watersheds. The recent Davao River Situational Report, in fact, recognizes pollution caused by pesticide run-off as one of key problems in the Davao River Watershed.2 These contaminated waters may actually end up unknowingly in people’s drinking water as what happened in the US in the 1990s where one out of every 10 public drinking water wells contained pesticides.

Communities around plantations where aerial spraying happen have nowhere to run to and are in fact situated there because of lack of economic choices. Aerial spraying is tantamount to dousing them and their limited livelihood sources with poison. In the process, this continuing lack of respect for peoples and the environment (which causes small and large shifts in functioning potential of people and natural resources) ultimately translates to adverse economic and social consequences.

What can be done?

While embarking on sustained campaigns for the eradication of synthetic chemical pesticide use, IDIS offers some pragmatic advocacies that you can adopt:

Support the call to ban aerial spraying in Davao City. Write to our Mayor and City Councilors:

• Practice/promote diversified cropping (with natural pest-pollution check and balance systems);
• Practice crop rotation, or planting of other crops after the harvest of a particular crop on the same area;
• Do not use/intentionally banned chemicals;
• Support organically grown food and other products by patronizing them and sharing about advantages;
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Is the practice of aerial spraying safe?

It depends on whose point of view is taken.

Banana plantation companies maintain that the pesticides they use are legally deployed and that government sanctions its safe use in agriculture.

Fungicides being sprayed by aerially are handled only by certified pesticide applicators who have undergone corresponding training. Company manuals detail safety protocols and measures. Government and industry regulating bodies abide by their mandate.

Even chemical pesticide manufacturers and distributors, while acknowledging potential health hazards of their products, practice precautionary measures in application and handling as a guarantee to safe use.

However, various studies and anecdotal evidence culled from actual experiences on the field point to the contrary.

Dangerous Drift

Pesticides sprayed do not stay put. Pesticides in the air can drift up to 3 kilometers or more from the treatment site, contaminating soil, open bodies of water, and other animal and human environments in the process.

Studies in banana-producing countries show that of the fungicides applied through air, about 40 times during each cultivation cycle, 15% is lost to wind drift and falls outside of the plantation, 40% ends up on the soil rather than on the plants, and about 35% is washed off by rain, totaling to a 90% loss2.

In the US, estimate for pesticides in general is even lower at 1-2% of sprayed chemicals actually reaching the target pests. Aerial drift is also estimated at 5% under optimal wind condition to 6% under more typical winds.

Aside from the airborne drift associated with the physical movement of the droplets of pesticides sprayed, drift may also occur even days after spraying is done. Referred to as Vapor drift, it is commonly associated with the volatilization of pesticides, or the physical change of liquid pesticides into vapor or gas3.

Second-hand Poison

Environmental exposures to fungicides usually involve relatively low concentrations that may occur over long periods of time. While the human health effects associated with chronic (long-term), low-level pesticide exposures are not yet well understood, a growing body of scientific evidence suggests that environmental pesticide exposures are associated with neurological and reproductive damage, effects on growth and development, birth defects, endocrine disruption, cancer, and other adverse effects4.

In 1999, toxicologist Dr. Romeo Quijano and daughter Ilang-ilang published a study (Ka- mukahan: A Village Poisoned) documenting the effects of 19 years of regular ground and aerial spraying on a small community in the banana plantation in Kamukahan, Davao del Sur. The initial study and consequent international fact finding missions confirmed significant health impact to both children and adults, as well as to farm animals. Contaminated soil and water were also attributed to the spraying of chemicals.

While the major causes of diseases were communicable and typical in poor, rural Filipino communities, some atypical patterns were also reported5 which were consistent with independent studies documenting health impacts from pesticide exposures.

• An unusually significant number of adult males showed signs and symptoms of anaemia and possible blood dyscrasias;

• A significant number of males and females exhibited signs and symptoms of behavioral and cognitive disturbances suggestive of endocrine disruption;

• A considerable number of children showed developmental delays including slowness, wasting delays in the development of sensorial, sensory characteristics, and mental deficiencies.

What are pesticides made of?

A pesticide formulation is a mixture of active and other (also called inert) ingredients, as well as metabolites, contaminants and impurities. Active ingredients are the biologically and chemically active substances – usually the only component identified in the pesticide label - that prevent, kill or repel pests.

Contaminants and impurities are responsible for product hazards, which have not been purposely added but are a result of the production process. Metabo- lites and breakdown products that are often more hazardous than the parent pesticide. It is formed when the pesticide mixes with water, soil, or living organisms. Those referred to, as other ingredients are the substances added to the active ingredient to facilitate its effectiveness. They are also misleadingly referred to as inert ingredients, which are often considered as manufacturer’s trade secrets and thus, unidentified.

There is a significant lack of toxicological information about inert ingredients. Of the 1,820 ingredients of which 1,350 remain unassessed, approximately 1,350 remain unassessed. However, the US Pesticide Report /pesticide renewable. http://infonetbio.com/e-hlth/pesticides.

Chlorothalonil contains hexachlorobenzene and pentachloronitrobenzene as manufacturing impurities; hexachlorobenzene has been classified as a carcinogen, a mutagen and a reproductive hazard. http://infonetbio.com/e-hlth/chloroth/pesticides.

What are the issues against the use of pesticides?

• With continuous application of pesticides, target pests are developing resistance to the chemicals, causing more often and greater amounts of pesticide application. FAO estimates that at least 520 species of insects and mites, 150 plant diseases, and 113 weeds have become resistant to pesticides meant to control them.

• Soil damage from rampant chemical fertilizer and pesticide application, usually in mono-crop farms has also been noted. In Davao, for instance, soil analysts report that intensive land cultivation and overuse of chemicals have damaged lands planted to banana that companies are now on the lookout for expansion areas since existing plantations have become unproductive over the years.

• The cycle of dependence on synthetic chemical pesticides, as well as fertilizers, causes increased input in crop costs without necessarily increasing yield in corresponding amount.

• Technically, chemical pesticides are designed to kill living things, it has life threatening impacts on people and the environment. According to the US National Research Council, only 10% of pesticides in common use have been adequately assessed for hazards.

• Acute toxicity is measured by lethal concentrations in air, lethal dose from exposure either orally or through the skin, and effective concentration that produces sub-lethal responses such as immobilization and loss of equilibrium/balance.

• Chronic toxicity or delayed effects can occur months or years after exposure, and may even develop from low levels of exposure over a long period of time. Some major effects associated with pesticides are cancer, neurological damage, and adverse effects on the reproductive system.

• According to World Health Organization estimates, 20,000 unintentional deaths and 250 million injuries happen every year due to pesticides.

• Beyond the reported acute cases, there is increasing evidence over pesticides that mimic natural hormones (known as endocrine disruptors), possibly causing adverse effects on specific body organs and systems, including reduction in male sperm count and undiscovered tests as well as increasing incidences of breast cancers.

• 29 IARC studies suggest that pesticides cause 14% of occupational injuries in the agricultural sector and 10% of fatalities in many countries.