Since the first “inoculated deep litter system” (IDLS) piggery in the United States was constructed four years ago under extension agent Michael DuPonte in Hilo, the facility design is now recommended as a best waste management practice by USDA NRCS and the Hawaii Department of Health. USDA now allows cost-sharing to aid in the construction or conversion of existing swine production facilities to incorporate IDLS components. Regulatory agencies were able to witness IDLS’ ability to handle waste with no pen cleaning or discharge of waste water over 4 years. Workshops were held on Hawaii’s island (August 2012) and Kauai (September 2012) for nearly 100 existing and prospective swine producers to assist with creating comprehensive nutrient management plans (CNMP) that are necessary for building permits for facilities with more than 4 pigs or >600 sq ft. During the past year, 40 small-scale poultry enclosures (“Hubbell Bubbles”) using a modified IDLS were constructed in Hilo. Five were built at field day demonstrations conducted by extension agent Michael DuPonte, who then monitored them for generation of nuisance flies due to waste management as well as loss of eggs and chicks to predators (mongoose, rodents, cats, dogs, hawks). To date, nuisance fly populations are in check with no losses to predators. 

PUBLICATIONS

IPM Implementation for Animal Agriculture

IMPACTS

VEGETABLE CROP IPM

Cooperators in the Area-wide Fruit Fly Suppression Program comprise 357 commercial farm acres; many have been participants for several years and have adapted management strategies to suit their farming operations. As a result, growers have reduced infestation rates and crop losses significantly, thus increasing their farm revenue.

Many growers have also reduced their reliance on organophosphate insecticides and adopted the use of GT-120 protein bait sprays. Home gardeners indicated increased knowledge gained by extension activities in fruit fly control, with significant improvement in participants’ knowledge of fruit fly species and life cycles, as well as confidence in their ability to apply suppression techniques.

IMAGES

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Top 10 reasons for misuse of pesticides

1. Can’t understand the label
2. Chemicals not working
3. Pest resistance
4. Misinformed about use or limited knowledge
5. No pest management plan
6. Pesticide cost too high
7. Willing to take risk
8. Spray coverage
9. Poor spray equipment
10. Spraying too close to harvest date

IPM for Socially-Disadvantaged Farmers

In May 2012, the Hawaii Department of Agriculture (HDOA) detected pesticides not approved for use on basil in samples of locally-grown basil from five produce distributors in O‘ahu, and promptly restricted sales and distribution. Samples from 4 of 6 basil farms were positive for at least one of the unapproved pesticides. In collaboration with the Local Immigrant Farmer Education Program (LIFE) and Risk Management Hawaii (RMH), HDOA extension agents, Steve Fukuda, Jari Sugano and Jen sen Uyeda, quickly coordinated an information-gathering session to identify grower issues that resulted in the violation (see above, Top 10 Reasons for Misuse of Pesticides).

An extension strategy was devised, and in September 2012, an educational workshop covered use of pesticides, reviewed common basil pests and pesticides registered for use in Hawai‘i. HDOA pesticide inspection process, and the knowledge of good agricultural practices and food safety, and provided training for agricultural professionals, and outreach to the general public (1,000 participants). Thai, Lao and Chinese translations were provided at several state-wide activities, including a Farmer’s Resource Workshop in April 2013 (photo above), which was attended by nearly 150 immigrant family farm operators, support agency representatives, legislators, and the general public.

Coordinated by Jason Shitashishi of USDA FSA, the “one-stop shop” event in Kahuku featured presentations and displays by HDOA, HI Department of Agriculture, and UH CTAHR’s Jari Sugano and Jim Ho on pest and disease management. Demonstrations included different systems of hot water application, from a handheld model to an automated version of the mobile shipping container system, sprayer calibration and the use of surfactants, and the effects of volume on spray coverage. HDOA provided updates to the Hawai‘i Pesticide Certification Program with information on new requirements for VAPAM usage and alerted growers to other pesticide regulations and safety equipment.

FOR ORNAMENTALS

“Floriculture and Nursery Pest Control Field Day” was coordinated by UH extension agent Andrew Kawabata and conducted on April 19, 2013 in Kea‘au, HI and attended by nearly 50 growers and shippers of potted ornamentals and cut flowers and foliage, state inspectors, and representatives from affiliated industries, and federal and state agencies. Demonstrations included different systems of hot water application, from a handheld model to an automated version of the mobile shipping container system, sprayer calibration and applications with new nozzle technology, use of surfactants, and the effects of volume on spray coverage. HDOA inspectors and staff monitored hot water treatments by nurseries in Hawai‘i County.

View presentations at: http://www.ctahr.hawaii.edu/harra grover.asp

IMPACTS

IPM FOR SOCIALLY-DISADVANTAGED FARMERS

Through one-on-one and small group visits, UH extension agents and faculty providing translation services learned to effectively communicate basic pesticide application knowledge in a cooperative, non-threatening setting to new and existing stakeholders in the basil industry, building trust and establishing themselves as a trustworthy resource for worker and consumer safety awareness and to help growers retain their market share.

Based on the mean of workshop evaluation survey responses, growers indicated learning 5 to 9 new ideas with potential on-farm application.

Through face-to-face interviews and farm visits, the top four areas of interest statewide among participants were determined to be:
1. Suppression management of insect and disease pests
2. Crop nutrition and fertilization
3. Marketing and adding value
4. New varieties, crops and products

For Ornamentals

In the past year, more than 80,000 potted plants (estimated $3.9 million) were hot water-showered, and nearly all species and cultivars tolerated the heat well; 2,112 coqui frogs (adults, juveniles, eggs, clutches) and numerous ants, slugs, snails, lizards, and worms were killed and removed by the quarantine treatment. Use of hot water on potted ornamental plants continues to be validated as a practical, cost-effective IPM strategy available to large-scale commercial growers, preventing potential pest interceptions at receiving ports in the US and Guam.

Post-activity evaluations by attendants of the field day indicated that the majority (77.3%) of growers and shippers of ornamentals are considering adopting one or more of the IPM strategies presented. Comparing respondents from the same groups of stakeholders at a pest control field day three years earlier, it is clear that the adoption of use of hot water to control quarantine pests rose from 31% to nearly 53%, and adoption of practices that would eliminate pest insecticidal sprays rose from 49% to 81%.

HONORS

Dr Arnold Hara, IPM Coordinator, UH Extension IPM, received Honorable Mention for going above and beyond the effort he extends to the state and the industries he serves, at the first annual Hawaii Invasive Species Council Awards held at the Hawaii State Capitol in March 2013.

SPRAY COVERAGE CLINICS

Five educational workshops/field days (total 54 attendees) were conducted on Maui and Hawai‘i Island growers by extension agents Robin Shimabuku, Randall Hamasaki, Steven Fukuda, and Jari Sugano on diamondback moth (DBM) insecticide resistance management. In addition, two-hour workshops, “Spray Coverage Clinic”, were conducted in Waianae (O‘ahu), Kula (Maui), Ho‘olehua (Molokai) and Waimea (Hawai‘i) in August and September 2012, averaging 25 attendees per clinic. Participants were eligible to earn 2 re-certification credits for holding restricted use pesticide (RUP) permits with class content covering the basics of pesticide application, methods and equipment, nozzle specifications, and factors that affect pest efficacy, spray coverage, and spray rates (see cover photo).