The Actual State of Using of Pesticide, IPM and Protected Horticulture in Vietnam

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Abstract  Pesticide should not threaten the welfare, health or lives of farmers. Many pesticides that have been banned or severely restricted used in Vietnam where pesticide regulations are often deficient, enforcement of decisions is inconsistent and there is a shortage of trained personnel. Overuse of pesticides is still very common and too many farmers remain unaware of appropriate pest control management. Further, even if farmers can read the pesticide labels, they do not always follow the instructions or use protective clothing, resulting in pesticide exposure and poisonings. It has also been found that poorer farmers apply lesser amounts of pesticides than better-off farmers, but they use more toxic pesticides. In response to these problems, the Vietnamese government was forced to act. There are many new policies and new regulations were promulgated to manage pesticide as well as many national program of training/ education farmer to improve their knowledge on the best use of pesticides.

Keywords: Ministry of Agriculture and Rural Development, Pest control, Phytosanitary, Plant Protection Department, Plant quarantine

Outline of Vietnam agriculture

- Area: Total: 331,210 sq km
  Land: 310,070 sq km
  Water: 21,140 sq km

Arable land in 1998 was 7,202,000 hectares (17,796,000 acres), of which 1,534,000 hectares (3,790,000 acres) were in permanent crops. Only about 15% of the land in the north is arable, and 14% of it is already under intensive cultivation. Agriculture in the north is concentrated in the lowland areas of the Red River Delta and along the central coast to the south. The Mekong Delta, among the great rice-producing regions of the world, is the dominant agricultural region of the south. Excess grain from the area is shipped to the northern parts of the country.

Rice, the main staple of the Vietnamese diet, occupies 94% of arable land. Other crops include corn, sorghum, cassava, sweet potatoes, beans, fruits, and vegetables. Other industrial and export crops produced in Vietnam include coffee, tea, tobacco, pepper, and jute.

Pesticide use in Vietnam

Before 1992, there were only 77 active ingredients with 96 product names belonging to 25 foreign firms that have been permitted use in Vietnam. Up to 2005, there have been more 400 active ingredients with more than 1000 product names which are supplied by more than 100 foreign and domestic companies. About 99 percent of pesticides quantities used in Viet Nam are imported. In recent years, imported pesticide quantities rose to nearly 50 000 ton finished product fp/year (2004) from 13,000 – 14,000 tons fp/year before 1990, while import value have been increased to around 200 million USD (1998) and about 166 million USD (2003) from 1990.

Pest and pesticide management

National plant protection organization in Viet Nam

Established in 1961, Plant Protection Department (PPD) is a State management body under administration of the Ministry of Agriculture and Rural Development-MARD. It employs around 465 staff working in the areas of plant protection, plant quarantine, inspection, and pesticide management.

Madate

- To carry out plant protection extension activities
- To administer plant quarantine activities at national level
- To conduct pesticide management including pesticide registration and residue control

Network

- Pesticide Division: responsible for conducting pesticide management including pesticide registration.
- Regional Plant Protection centers: guiding provincial plant protection authorities in pest control, inspection plant protection and quarantine, pest management.
- 64 plant protection sub-departments: working at field level and under the jurisdiction of provincial People’s Committees.
- Manpower: nearly 3000 Plant Protection Officers.

Activities

- Plant protection activities
- Pest surveillance and forecasting to provide early warnings
- Implementation of pest control programs
- Training of trainers and farmers on IPM using participatory non-formal education process

**Plant quarantine activities**
- providing phytosanitary inspection services and certification for the import and export of plant commodities
- supervising phytosanitary treatments for the import and export of plant commodities
- undertaking domestic and post entry quarantine procedures
- conducting research and development activities in plant quarantine area

**Pesticide management**
- Pesticide Division takes responsibility of pesticide management and registration.
- 2 Pesticide Control Centers located in Hanoi and HCMC are assigned to conduct pesticide quality assurance, residue control and field trials for bio-efficacy of pesticides to be registered in Viet Nam.

**National IPM Program in Viet Nam**
- Started in 1992 with financial and technical support from FAO with main activities are Training of Trainers (TOT), Farmer Field School (FFS) and follow-up FFS activities.
- PPD is responsible for implementing the National IPM Program coordination with IPM specialist group of PPD working closely with major donors including FAO, WB, EU, DANIDA, and NORAD. Currently, it maintains 11 IPM related projects involving many stakeholders such as farmers, government line ministries, international NGOs, national and international research institutions, and bilateral and multilateral donors.
- IPM priority focused mainly on rice and vegetable crops. Needs of IPM program in Viet Nam further develop and promote including improve the ability of PP-system from center to locality. Continuously innovate curriculum in FFS; FFS approach applied widely in agriculture extension.
- The problem of pest resistance (both agriculture and public health) in Viet Nam is big problem. For the efforts solves this problem methods applied as use resistance varieties, exchange new pesticide, use natural enemies introduced.
- Main constrain to IPM programs in Viet Nam: excessive pesticide advertisement affects mentality of farmers; training demand for farmers is very high but the capacity on financial and manpower limited.

**Strength and weakness of the present pesticide management system in Viet Nam**

**Strength**
- Based on guideline, the registration scheme was revised in line with international scheme.
- Viet Nam Government support and pay attention to pesticide management and the pesticide management in Viet Nam will be better.
- Training/education farmers and providing them the best knowledge on pesticide use.

**Weakness**
- Awareness of farmer on pesticide still limited.
- Pressure of commercialization.
- Influence of pesticide companies is still high.
- Inspection and control pesticide import, formulation, business still need to be strengthened.

**Major bottom-necks to ensure sound pesticide management**
- The most important is to have National Program of Training/Education Farmer to improve their knowledge on the best use of pesticides.
- Priority in Viet Nam that need to be strengthened
- Amendment of pesticide registration scheme.
- Expanding the inspection and control of pesticide importation, formulation, distribution and use.
- Continuation of training/education program on safe use of pesticide.

**Successful IPM programs in Viet Nam**
- The project was supported by ADDA in Vietnam. The IPM project was started in February 1999 and after being extended with a second phase is was terminated by December 2005. The project has been implementing IPM by use of the Farmer Field School (FFS) concept. This is a participatory method in which farmers select the topics by themselves e.g. introduce improved varieties with high quality seed, optimize the water and fertilizer management, reduce the use of pesticides and thereby produce safer vegetables for consumers. The objectives of the IPM project in Vietnam were:
  - Full season training of 20,000 vegetable farmers in vegetable IPM, enabling them to make improved decisions on the management of vegetable production systems.
  - Create awareness of the IPM, and Farmer Field School concept among vegetable farmers in general
  - Increase the supply of safe vegetables to Hanoi consumers
  - Increase the capacity of HNFU and other involved insti-
tutions in IPM, English and administration.
- There has been established more than 100 farmers
  group which all in all seems to function very well for the
  benefit of the involved farmers.
The project has successfully achieved the expected re-
results.
The National IPM program: this program has been run-
ning since 1992 with support from the FAO.
- Funding has variously been provided by governments
  of Australia, Norway, Denmark and EC. Training based
  on Farmer Field School (FFS).
- Many provincial agriculture departments are also train-
ing farmers in IPM and safe vegetable production.
- The commodity groups are: rice, sweet, potatoes, cot-
ton, peanuts, soybean, sugarcane, vegetable.
- Location of projects: country wide
- Number of farmers was trained: more than 500 000
  farmers.

**Vegetable IPM:** providing training to farmers on imple-
menting IPM in vegetables through the use of Farmer
Field School (FFS).
- Participatory training method in which farmers select
  the topics of interest to them.
- Goal was to optimize the water and fertilizer manage-
ment, reduce the use of pesticides and produce safe vege-
tables for consumers.
- Commodity groups: vegetables
- Location of projects: Northern Vietnam
- Number of farmers was trained: 9000 vegetable farm-
ers and more than 100 farmer groups.

**CIDSE IPM training:**

**Goal:** to spread IPM capability in tea and improve farm-
er’s knowledge of IPM in field crops.
- Commodity groups: tea, rice, maize, soybean, tea and
  potatoes
- Location of projects: Tea in Thai Nguyen, Phu Tho
  province; other crops in Bac Kan province.
- Number of farmers was trained: 7840

**Citrus IPM:** season long field studies and development
of FFS for IPM
**Goal:** reduce use of broad spectrum pesticides through
introduction of petroleum spray oils
- Commodity groups: citrus
- Location of projects: Nghe An and Tien Giang prov-
ince
- Number of farmers was trained: unknown