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Construction technology in the field of ecological
Dr. Nguyen Van Huynh (05/01/2010 08:30)

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Today, if he can successfully apply genetic technology (genetic engineering) to control the plant's genome to create new varieties with desired properties, then, similarly, can also be ecological technology (Ecological engineering) for construction of fields of interest to attract natural enemies to eradicate plant pests to reduce pesticide use, environmental protection.

Applying this view, the entomologist at the International Rice Research Institute (IRRI) with financial support from the Asian Bank (ADB) to cooperate with other countries were pests cause serious damage over the years to test this model flowering plant onshore fields to attract natural enemies to attack from pests and reduces the use of pesticides. There are three countries selected to participate in the implementation of this project are China, Thailand and Vietnam and the experiment began in early September 11/2009.



International delegations to visit and record on the implementation model in Cai (Tien Giang)

At DELTA, we have been very successful in the application of advanced farming techniques to manage pests so farmers had consecutive winning seasons in the past many rice crops. The winter-spring of this year, Rice won the season than ever before with total area of over 1.5 million hectares. This is because we have overcome the potentially harmful pests by farmers in direct community-level bulk seed sowing "Ne

hoppers" wide, apply strict measures IPM (IPM) by not spraying pesticides on natural enemies early to keep the field in order to create the ecological balance. Even companies in An Giang Plant Protection also has a team of technicians "Along that same peasants" did this work so well during the last years when we visit rice fields in Moc Hoa (Long An) has told farmers in this force as follows: "Every year around this time (after the rice has become), they usually have to spray 2-3 times relative to treatment plant hopper, but this year the boy FF (force field of BVTV.AG) should not say not necessary to spray, so that a winning season rice! ".

However, confidentiality of pests capable of transmitting virus diseases in rice, is still very high on fields cultivated by farmers in a row for 2-3 years so they can spread from one service to another service. Moreover, farmers are not aware of the role of natural enemies in maintaining the ecological balance of rice fields should still relies heavily on the use of pesticides, leading to increasing drug resistance deep hoppers, while natural enemies killed and pests resistant varieties increasingly lost its appeal. Therefore, prevention and treatment should be directed to long-term pests towards the sustainable rice production in the region. Reconstruct the model field this eco-technology to meet the above requirements.

We did well at the two locations is harmful pests are most severe and Cai Cai Lay district of Tien Giang province, the area of each model is about 30 hectares of rice fields for the whole farm with over 30 People in a community. Farmer training in advanced farming techniques, seed sowing measure "Ne hoppers" and limit the use of pesticides by planting grass on the banks of flowering fields to attract natural enemies. Choose the type of flower color and scent match, more security and pollen to attract natural enemies because most of adulthood they need this food to supplement energy. Furthermore, the flowering trees this should be easy to grow, need little care and can bloom all year round.

Flowers are grown on the coast before breeding farms down to how the rice is already available on the coast around flower fields to attract natural enemies from the start. Farmers care for their fields as often, and technical staff to arrange experiments to monitor and evaluate the effectiveness of the model into four growth stages of rice is coated, to fast, and do bear. A light trap is arranged in a corner of the model, different types of traps in rice fields are arranged to monitor security and natural enemies of pests in rice fields for both models and certification of farmers outside the model.

Initial results are dated 1/12/2009, IRRI, ADP and other members of about 50 international guests to visit on the deployment model in which the preparatory Cai had been chosen as the point is best prepared of 4 points in the official China, Thailand and Vietnam. Now farmers are sowing simultaneously technically "Ne hoppers" because hoppers just finish the lights, and flowers have been propagated about a month before it is planted on the banks of the additional samples in the field and shore. General reviews of the union as a model to be deployed on very good size, the technique was conducted to complete high prospects for success.

However, members of China and Thailand are concerned about too large an area can be difficult to mobilize farmers in their countries. The reason we do so not because thanks to "socialism", but because farmers believe in the direction closely with reality on the field so new voluntary participation. Want to learn from experience IRRI rice seed sowing "Ne hoppers" Vietnam's plans to put into solving the situation developing in pests present in Thailand, but they also worry is not so difficult to mobilize collective farmers, as well as bulk trapping light for tracking and forecasting for both the pests.

Currently we have about 300 light traps across the Mekong to the local daily reported on data for Plant Protection Department (MARD) and general weekly forecast for the province to designate direct sowing time of sowing "Ne hoppers." Be so, but farmers should also check the lights in traps for their own specific fields before sowing. "Workshop on the shore" was held on 27.01.2010 for the model at 24/2/2010 Cai and Cai Lay in the model. Bumper rice is (about 6T/ha) process does not use pesticides during the rice crop. Besides flowering grasses, farmers grow additional crops such as flowering okra,

corn to simultaneously increase profits. Some noted the results of the initial data analysis as follows:

- Planting grass on the shore attract many fields of natural enemies to live and reproduce in such as spiders, ground beetles ... heading to catch food.
- Traps and yellow sticky traps that many parasitic wasp and mosquito water (as prey for natural enemies).
- Many insects to obtain nectar diversity living in rice fields.
- No spraying was some deep secret that hoppers in rice fields is not significant until harvest.
- The farmers seemed interested and will select flowering plants suitable for the following for their fields.
- Many people visit and weekly newspapers have all introduced as a green model of rice production under GAP standards.
- A number of flowering grasses selected for deployment in the upcoming replicate the model are: Sai land (*Wedelia chinensis*), My mother (*Pilosa bidens*), chrysanthemum Spur (*Colobogyne sp.*) Cut pork and grass (*Agelatum conyzoides* .) Characteristics that they have more flowers with honey, pollen and perfume attract insects natural enemies but easy to grow, less care, not cover blisters and flowers year-round rice.

Prospects for success of the ecological model of this technology is a breakthrough for the program re-field construction at the community level, targeting long-term goals such as farmers organizations working together as communities, along application of advanced production techniques and friendly environment in order to limit the use of pesticides, while lowering production costs and enhancing quality of agricultural products ...

This model could also apply to fruit or vegetables in the development of farming systems have been created for biodiversity has diversified products to increase profit per unit area farming, to keep the area of agricultural land for food security and greenery for life increasingly in urban dust around.