

# Comparison of Crop Qualities, Pests and Weeds Control as Influenced by Organic and Conventional Farming<sup>(1)</sup>

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## Summary

In order to evaluate the practicability of organic farming system in southern Taiwan, a long term survey on the experiment field with the mixture of slate, shale and sandstone alluvial soils at Chi-Shan, Kaoshiung Hsien, was established in July, 1988. Two rotation systems which each cycle have six crops in two years, i.e. Tsuno-Kusa-Cabbage-Sweetcorn-Rice-Vegetable soybean or bush bean-Sweetcorn as rotation I and Tsuno-Kusa-Sweetcorn-Vegetable soybean-Rice-Radish-Vegetable soybean as rotation II combined with three farming methods, i. e. organic, conventional and intermediate farming were used. Results of the first 4 years (two cycles) are shown as follows:

In organic plots, the qualities of products such as flavor of cabbage, radish and vegetable soybean, Brix of sweetcorn and head rice of two rotation systems in cycle 1 showed slightly better than those of conventional plots. But the appearance of organic products showed unattractive except that of fall vegetable soybean in rotation I system.

The organic plots were infested more seriously pests than the conventional except that pests of vegetable crops, Turcicrm leaf blight and Maydis leaf blight of organic plots which covered with rice grain shells after sowing infested lately and slightly than those of intermediate and conventional plots in cycle 2. The infestation rate of intermediate plots were interval between the former and later plots except that rust of vegetable soybean in Autumn, 1989. However the occurrence of insect pests were under controlable level except that Aphids in vegetable crops.

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Weeds in organic plots occurred seriously and showed about 2.7-3.9 times higher the conventional. In intermediate plots, weeds occurred slightly than the organic, but showed 1.2-2.3 times higher the conventional. Effect of weeds control which covered with rice grain shells after sowing would be better than that covered with rice straws in organic plots. Our experimental results implied that numbers of weeds would increase after continuously cropped in upland condition and decrease gradually in the crops after paddy rice. These phenomena were simultaneously found out in all three farming methods of rotation I and II systems.

In concluding the first 4 years experiment, we found that the organic farming enhanced crop qualities except that appearance of products, but easily infested of pests, insects and weeds, because it relied non-pesticide i. e. intermediate farming may be the best approach way of sustainable agriculture in southern Taiwan.