## Mini-review of experimental results of organic farming over 28 years at the Kaohsiung District Agriculture Research Extension Station

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## Abstract

The organic cultivation trials on KDARES (Kaohsiung District Agriculture Research Extension Station) were started in 1988. The experiment approaches were conducted including lasting long-term organic farming for soil and crop yield monitoring comparison, application of organic cultivation technology development on rice, vegetables and fruits, and analysis of the characteristics of organic agricultural products. In the long-term organic farming experiment, the effects of different rotation system and fertilization treatment on soil and crop yield were very crucial. Although the soil physical and chemical properties changed significantly in reaching 54 g kg<sup>-1</sup> of organic matter content, and lower disease occurrence on the region of paddy-upland rotation system coupled with organic fertilization, the yields of some nitrogen-needed crops (such as sweet corn and cabbage) were still slightly lower than that of chemical fertilizer treatment. Therefore, the suitable rotation and fertilization system for sustainable agriculture management still need to be further tested and discussed. In addition, organic rice cultivation is currently well-skilled, some varieties including Kaohsiung 147 or Taisen waxy No. 2 can be suitable used to the organic production. Many facilities are also used to stabilize organic vegetables cultivation, many organic materials have been developed which can be widely used in pest control, and some vegetable varieties also have been selected for organic cultivation. Besides, the skill of organic fruit cultivation was higher and economic production still has been struggling. The antioxidant properties of organic products were verified affected by varieties and cultivation methods. More organic cultivation technology remains to be further development.

Keywords: long-term organic experiment, lowland-upland rotation

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