

Composting and Utilization of Sea Organic Wastes.

I. Composting of Soil Media and Their Effects on Continuous Muskmelon Cultivation.

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Muskmelon, one of the important economic crop at Penghu, is acceptable by consumer because of its rich juice, fine texture, and special taste of the fruit. However, owing to continuous planting of the same crop, some problems occurred.

For solving these problems, two experiments have been conducted. First, soil media were prepared from four combinations of non-sea wastes, fish powder, shrimp shell, and seaweed. Each combination consisted of organic wastes, including peanut hull, rice bran, bone powder, bean cake, and chicken manure, and soils in the proportion of 1:1. These materials accumulated outdoor for about 6 weeks, with spraying fresh water and turnover at a period of about 1 week. Muskmelon under greenhouse were planted for 6 continuous crops to all soil media.

Second, soils which had been grown muskmelon for 6 continuous crops were composted again with the wastes of sea food processing in the same way as first step.

Results showed that leaf area gradually reduced with continuous planting, and the best fruit quality was achieved for first crop. Variety of Sunrise showed wilting within several days in the period of fruit setting after 2 continuous crop, however, variety of Andes did not show wilting instead of split fruit. Medium with fish powder, although having the highest leaf N content for the first three crops, could not help fruit quality. Medium with sea-weed indeed increasing fruit weight, however, fruit soluble solid content was low. Medium with shrimp shell had the best result in term of resisting to continuous cropping problems and owned the best growing character of leaf area which induced the highest fruit soluble solid content. Soil medium composted again showed good net performance to the growth and fruit quality. However, it should be noticed that medium composted again left large amount of nutrients which might inhibit the performance of fruit setting.

Key words: Sea organic wastes, Soil media, Composting, Muskmelon, Continuous cropping.

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