

# **Composting and Utilization of Agricultural and Sea Organic Wastes<sup>1</sup>**

## **(II) Manufacture of Seedling Media to Cucurbit and It's Physical-Chemical Properties.**

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### **Summary**

The best way to deal with organic wastes is composting it and returns to farmland. Compost can also be used as high quality seedling media by making some changes such as physical and chemical properties. The purposes of this experiment are to evaluate how the changes are made. Four composts, with one of them were ground into five particle sizes. Seedling media were made up of compost and peatmoss at different proportions. Cucurbit seedlings grown in the greenhouse were investigated.

Resulted shown that air porosity and available water contents are significantly affected by particle sizes of the compost. The bigger particle sizes of the compost the higher air porosity, and the lower available water content. In wetting status, air porosity is 67%, 40%, 28%, 12%, 4% and available water content is 13%, 28%, 44%, 56%, 61% with respect to particle sizes of the compost 3~2mm, 2~0.6mm, 0.6~0.25mm, 0.25~0.1mm, and below 0.1mm. Seedling growths show that particle size 2~0.1mm is the best, its character's air porosity 17%, liquid phase 55%, available water content 42%, bulk density 0.21g/ml, specific gravity 0.74g/ml, mild pH is fit the criteria of idea media. The EC value and the ability of nutrients supply are important to the medium. EC values are significantly affected by organic materials, especially sea organic wastes that induce compost EC value 4~11ms/cm. In order to achieve better seedling performance, it is necessary to reduce EC value to 1.58ms/cm or lower by mixing compost with peatmoss. The sequences of salt tolerance for cucurbit seedling are muskmelon >luffa >watermelon. The abilities of nutrient supply are also significantly affected by composts. Peatmoss does have a good response for chemical fertilization than compost, so it is not important to apply fertilizer in the composted media. In addition, Composts mixed with peatmoss are more suitable to inoculate microorganism than media only contain peatmoss.

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