

Tree neighbourhood effect on the growth and production of nutmeg (*Myristica fragrans* Houtt) in Ternate Island, Indonesia

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ABSTRACT:

Nutmeg is an agriculture product from Ternate which contributes the highest amount to the income of Ternate people. Nutmeg is planted as the main plantation along with other side plants such as clove plant, coconut, durian, etc, creating adjacent system with plants' canopy mutually intercepting. The production of nutmeg highly depends on the spaces between plants and the type of side plants. The spacing should also be determined based on the type of the side plant preferences since any intra-plant interaction and inter-plants interaction might trigger overlapping nutrient consumption, causing low nutmeg production. When the food is running out, the plants will be competing to get more sunshine, water and nutrients. In order to understand the adjacent crop system of nutmeg, soil fertility, type of the closest side plants, and the production of nutmeg were measured in this research. This research employed observation method conducted to 30 paired-plant samples which were purposively determined. Target nutmeg of each pair was determined as the center-point. The space between plants at four quadrants were measured using the point-centered quarter sampling method. The result of this research showed that plants' canopies were overlapping each other. The status of soil fertility was low to intermediate in which C-organic, Mg, pH, Ca and C/N ratio were known to give major contribution to the amount and the weight of nutmeg. The type of side plants determined the nutmeg plant production. The highest nutmeg production was obtained by the nutmeg plants which were planted with coconut as the side plants, better than those with other nutmeg or cloves as the side plants.

Keywords:

Tree neighbourhood, Nutmeg production, Ternate Island.