NODULATION PATTERN AND NODULE CHARACTERISTICS IN CROTOLARIA JUNCEA L.(SUNHEMP)

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Crotolaria juncea belongs to the family Leguminosae and is used as a green manure crop in paddy fields and market garden soils in the Jaffna peninsula to improve the fertility of soil.

Nodulation in this plant starts 2-3 weeks after germination when the seedlings are 10-15 cm in height. On a three week old seedling, the nodules are small, round and whitish attaining the size of a pin head. Nodules continue to increase in size and number during the subsequent period of growth until the end of flowering (8 weeks), when they begin to shed. By the tenth week most of the plants were found to be devoid of any root nodules. The maximum number of nodules/plant was observed at 50% flowering, that is after sixth week. The nodules also show changes in morphology, changing from round to elongate with fingerlike branches and finally becoming corolloid. The nodules that were pink in colour, turned green at the basal region around the ninth week and became completely brown by the tenth week.

The number of nodules/plant and weight of nodules/plant on normal untreated market garden soil (red latosols) were found to be 20 and 0.22 g respectively. These values are much lower compared with that of cowpea or soybean. Incorporation of cowdung manure in the soil was found to improve nodulation and duration of active nodule function. High correlation was observed between the dry matter content of the plant and the weight of the nodules. The dry matter content of the plant increased with increase in the weight of nodules.