7. CONCLUSIONS AND SUGGESTIONS

1) Of the 4 partly decomposed sheep droppings, press mud, *Pongamia* leaves and organic mixture used in the reproductive study of adult *L.mauritii* and *E.fetida*, *Pongamia* leaves are considered to be the best feeding substrate for *E.fetida* and sheep droppings are the best one for *L.mauritii* when compared to other organic materials if one consider the ability of earthworm to produce more cocoons, hatchlings and biomass.

2) Among the 4 organic materials used in the vermiculture practice of F₁ hatchlings of both species, *Pongamia* leaves and sheep droppings are respectively considered to be the best feeding organic materials for *E.fetida* and *L.mauritii* when compared to other organic materials if one considers the best weight gain, quick sexual maturity and a fast growth rate as index. From this vermiculture study, it is inferred and suggested that if some body wants to start vermiculture practice in rural areas for their better living through earthworm biomass production to meet the protein requirements of animal feeds for the culture of other edible organisms, they should select both the earthworms and their favorite organic materials *Pongamia* leaves and sheep droppings respectively.

3) Of the two earthworm species used in the vermicomposting practice with 4 partly decomposed organic materials, though both of them effectively decomposed all the said organic materials and improved most of their macro and micronutrients during vermicomposting process, the nutrients improvement made by *L.mauritii* was relatively more when compared to the nutrients increase effected by *E.fetida*. And hence both of them can be used as suitable effective earthworms for quick vermicomposting practice of said organic materials.
4) Of the C:N ratios observed in sheep droppings, press mud and *Pongamia* leaves after 60,45 and 180 days of anaerobic decomposition and 30 days of vermicomposting practice with these earthworms, the C:N ratio noted in sheep droppings was relatively very high and abnormal when compared to the C:N ratios observed in other organic materials which indicates that the decomposition process of sheep droppings is not fully completed and hence it must be completely decomposed first till its C/N ratio reduces to 20 or less than 20 before use in any plant cultivation as organic fertilizer. From these results, it is suggested that before application to any plant, the organic materials of such type should be decomposed fully first through anaerobic decomposition or by vermicomposting practice with earthworms until their C:N ratios reduced to 20 or <20 for immediate absorption of available organic nutrients present in them.

5) Of the three partly decomposed, *E.fetida* exposed and *L.mauritii* exposed organic materials used in the black gram cultivation, the black gram raised in partly decomposed organic materials showed relatively a lesser growth and yield over the plants raised in *E.fetida* exposed and/or *L.mauritii* exposed organic materials. Similarly of the two earthworm exposed organic materials used, the growth and yield of black gram raised in *L.mauritii* exposed organic materials was relatively high when compared to *E.fetida* exposed organic materials. From these findings it is concluded and suggested that the organic materials vermicomposted by *L.mauritii* are more effective and productive than the one with *E.fetida*.

6) Similarly out of 4 types of partly decomposed, *E.fetida* exposed and *L.mauritii* exposed organic materials used in the black gram cultivation, the black gram plants that
are raised in press mud produced relatively more seeds than the same plants raised in other organic materials with seed production rate as press mud > Pongamia leaves > organic mixture > sheep droppings. And from these results, it is inferred and suggested that the nutrients rich press mud can be given more priority among these organic matters to get more profit through black gram cultivation.

7) Though adverse effect was noticed in the survival of L. mauritii under higher doses of press mud (75 and 100 PSR), but the same press mud after vermicomposting practice with E. fetida exerts good impact (yield) on the cultivation of black gram and hence it may be concluded and suggested that it can be used as good feeding material for E. fetida to produce more biomass and also to be used as good manure for black gram plants to yield more quality grains.