

### Pepper- Organic manure studies

Black pepper (*Piper nigrum* L.) is the second most important export agricultural crop extensively grown throughout the wet and intermediate agroclimatic zones in Sri Lanka. A field experiment was established at Export Agriculture Research Station, Matale to evaluate the effect of two types of commonly used organic manures (cattle and poultry) at three different rates (8, 12 and 16 Kg/ plant/ year) with or without inorganic fertilizers, control and recommended doze of inorganic fertilizers. (200 N, 160 P<sub>2</sub> O<sub>5</sub> , 200 K<sub>2</sub> O and 28 Mgo g/ plant/ y) on growth of pepper and impact on soil chemical properties.

Application of poultry manure increased length and number of leaves of pepper vine at two years after planting, compared to the application of cattle manure at same rates. Application of poultry manure at the rate of 12 kg/ plant/ y with half of recommended doze of inorganic fertilizer showed highest length of the vine. In treatment combinations of cattle manure, highest length of the vine was recorded with 16 kg/ plant/ y without inorganic fertilizers. Poultry manure applied treatments have shown superior soil N contents compared to the cattle manure applied treatments irrespective of application of inorganic fertilize. Inorganic fertilizer alone did not show any significant effect on soil N content.

However highest soil exchangeable K of 1109 mg/ kg was found with recommended doze of inorganic fertilizer while in control it was 220 mg/ kg. Organic manure treated plots showed significantly higher organic matter content compared to the treatments of purely inorganic fertilizer. Highest organic matter content of 5.16% was recorded in the treatment of poultry manure applied at 8 kg/ plant / y without inorganic fertilizer while control it was 0.93% Application of poultry manure at the recommended doze of inorganic fertilizer could be recommended for pepper based on the growth performances and soil chemical properties.