B-24 Effect of animal manures on potato production in the upcountry

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An investigation was conducted to study the individual and combined effects of animal manures and chemical fertilizers on the performance of potato at Bandarawela. Animal manures (cattle manure, poultry manure, broiler litter, goat manure, poultry droppings and pig manures) were applied at the rate of

10 t/ha each. These animal manures were also tested in combination with chemical fertilizers. The above treatments were factorially combined and tested in a Randomized Complete Block Design with 3 replicates. Chemical fertilizer rates used were 150 kg N/ha, 125 kg P_2O_5/ha and 150 kg K_2O/ha.

Animal manure application increased the potato yield significantly (with the exception of cattle manure application) over the control. The highest crop yield (15.6 t/ha) was obtained with the application of poultry droppings and broiler litter (12.5 t/ha each), goat manure (10.7 t/ha), pig manure (8.9 t/ha) and cattle manure (8 t/ha) alone. The lowest yield (6.7 t/ha) was obtained from the control plot. The application of chemical fertilizer significantly increased the potato yields. Highest yield could be obtained by the addition of poultry manure + chemical fertilizers.

These findings demonstrate that poultry manure is a good source of animal manure for potato cultivation compared to other animal manures tested. Cattle manure was inferior to poultry manure, poultry droppings, broiler litter, goat manure and pig manures. Therefore, poultry droppings, broiler litter, goat manure and pig manure appear to be suitable replacements for potato cultivation.