B-123 Effect of sources and levels of liming materials on soil acidity in ultisols

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Ultisols, the main soil group in the upcountry, are acidic. Hence, correction of acidity is an important fertility management practice in this soil. A long-term field experiment was primarily designed to determine suitable sources and levels of liming materials to correct the soil acidity in Ultisols at the RARDC, Bandarawela.

Two sources of liming materials (burnt lime and dolomite) were used in this experiment. They were added at rates of 0, 0.5, 1 and 2 t/ha per crop. In addition, a treatment with 10 t/ha poultry manure was also included in the trial design. Potato, cabbage and pole bean were grown in a sequence.

The trial was laid out in a Randomized Complete Block Design and replicated 3 times. Lime and dolomite were incorporated into the soil, one week before planting the crop. In addition, poultry manure was added 4 days prior to planting and the plots were irrigated 3 days before planting. Nitrogen, phosphorus and potassium were added to all treatment combinations according to the rates and times recommended by the Department of Agriculture.

In all crops, the highest yields were obtained by the addition of 10 t/ha poultry manure. In addition, the application of poultry manure at the rate of 10 t/ha decreased the soil acidity. Lime was more effective than poultry manure and dolomite to correct the soil acidity. Furthermore results revealed that the application of lime at the rate of 2 t/ha is necessary to correct the soil acidity in Ultisols. The results obtained from this study indicate that the application of poultry manure will be a viable option to increase vegetable yields and to correct soil acidity.

Hence, the use of poultry manure will be an economical soil fertility management practice for vegetable growers in the upcountry. This will result in a big saving for the vegetable growers of the upcountry region.