

**B-105: Influence of incorporation of leaf residues on potatoes grown on regosols in Kalpitiya peninsula**

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The Kalpitiya peninsula on the north western coast of Sri Lanka is an area where intensive agriculture is becoming increasingly important. The area is characterised by high air temperatures throughout the year and the soils classified as regosols which contain about 98 % sand. Potato growers in the area seem to apply as high as 400 kg N per ha per crop; about 60 - 80% of which is leached beyond the root zone polluting the ground water which is the only source of potable water in the area.

A series of experiments were carried out at the Agricultural Research Station, Kalpitiya during 1990/91, 1991/92 and 1992/93 Maha seasons, aimed at investigating the possibility of substituting inorganic fertilizer requirement with the incorporation of organic manures such as plant residues. Different levels of inorganic fertilizers were compared with and without incorporation of plant residues to the soil prior to the potato crop.

Results indicated that, the substitution of 50% of the inorganic fertilizer recommendation with the incorporation of dried ipil ipil leaf residue at the rate of 10 t/ha 2 days prior to planting of potato, increased both total and marketable tuber yields over the full inorganic fertilizer recommendation. The % plant survival was not affected by the incorporation of leaf residues, indicating that the incorporation of leaf residues has not created conditions favourable for disease development.

It can be concluded that, the incorporation of 10 t/ha of dried ipil ipil leaf residues may successfully substitute 50% of the inorganic fertilizer requirement of potato under Kalpitiya conditions, which is favourable both in terms of reducing fertilizer cost and controlling the ground water pollution in the area.