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| **Bibliography** | Sayok, A.K.; Hartemink, A.E. (1998) Erosion and soil fertility changes under Leucaena intercropped with sweet potato in the lowlands of Papua New Guinea, In: Papua New Guinea Journal of Agriculture, Forestry and Fisheries, Vol.41 (1 [Special Issue]), 85-90 |
| **Abstract / Content summary** | Surface runoff, erosion and changes in soil fertility were measured under Leucaena leucocephala intercropped with sweet potato and compared to sole Leucaena leucocephala cropping. The study was conducted on-farm in the humid lowlands of Papua New Guinea for two years (1992-1993 and 1993-1994). The soil at the site was derived from intrusive igneous rocks (Inceptisol) and had a slope of 58%. In the intercropped plots (150 m² each) during the two years of observation, surface runoff was 817 and 1003 mm yr¹, or 37% and 55% of the total rainfall. Erosion was low and on average 3.9 and 2.9 t soil ha-¹ yr¹. Under sole leucaena, surface runoff was 537 and 668 mm yr¹ and erosion was 3.5 and 2.2 t soil ha-¹ yr¹. Linear regression showed that both monthly rainfall and surface runoff, and surface runoff and erosion were well correlated (r² >0.6) for intercropped and sole leucaena. Soil fertility declined under intercropped and sole leucaena but there were no major differences. There were also no statistical differences in the height of the leucaena. Sweet potato yields declined from 4.2 t fresh weight ha-¹ at the first harvest to 0.2 t ha-¹ after 23 months in the intercropped plots. The study has shown that intercropping leucaena with sweet potato during the first two years does not significantly increase erosion or affect the soil fertility as compared to sole leucaena. [Original abstract] |
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