

## SHORT NOTE

# The supply from rainfall of four elements to an area of northeast Rhodesia

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The monthly variations in the concentrations (ppm) and amounts ( $\text{kg ha}^{-1}$ ) of calcium, magnesium, sodium and potassium were measured during the period November 1972 to October 1973 at nine sites within the Inyanga Mountains of northeast Rhodesia. This is an upland area (1800–2200 m) composed largely of granite, though

dolerite forms the summits, and is predominantly under tropical montane grassland. Average annual maximum and minimum temperatures at Inyanga village ( $32^{\circ} 45' \text{ E}$ ,  $18^{\circ} 14' \text{ S}$ ) for the period 1951–61 were  $20.3^{\circ}\text{C}$  and  $9.1^{\circ}\text{C}$  whilst average annual rainfall was 1225 mm.

Table 1. *Average monthly ionic concentrations (ppm) in rainfall at nine sites, Inyanga, E. Rhodesia 1972–73*

|               | N    | D    | J    | F    | M    | A    | M    | J    | J    | A   | S    | O    |
|---------------|------|------|------|------|------|------|------|------|------|-----|------|------|
| Rainfall (mm) | 92   | 109  | 108  | 120  | 100  | 66   | 45   | 19   | 25   | 34* |      | 149  |
| Ca            | 0.10 | 0.06 | 0.15 | 0.10 | 0.12 | 0.21 | 0.14 | 1.11 | 0.49 | —   | 1.03 | 0.51 |
| Mg            | 0.09 | 0.05 | 0.09 | 0.02 | 0.07 | 0.15 | 0.11 | 0.71 | 0.21 | —   | 0.63 | 0.24 |
| Na            | 0.23 | 0.22 | 0.32 | 0.22 | 0.46 | 0.59 | 0.85 | 2.57 | 1.11 | —   | 1.72 | 0.20 |
| K             | 1.61 | 1.51 | 0.76 | 0.66 | 0.61 | 0.35 | 0.39 | 0.63 | 1.17 | —   | 1.70 | 0.32 |

\* Total for 2 months.

Table 2. *Average monthly amounts of selected ions ( $\text{kg ha}^{-1}$ ) in rainfall at nine sites, Inyanga, E. Rhodesia 1972–73*

|               | N    | D    | J    | F    | M    | A    | M    | J    | J    | A–S  | O    |
|---------------|------|------|------|------|------|------|------|------|------|------|------|
| Rainfall (mm) | 92   | 109  | 108  | 120  | 100  | 66   | 45   | 19   | 25   | 34   | 149  |
| Ca            | 0.09 | 0.06 | 0.12 | 0.11 | 0.11 | 0.14 | 0.06 | 0.19 | 0.13 | 0.33 | 0.55 |
| Mg            | 0.08 | 0.05 | 0.07 | 0.02 | 0.07 | 0.10 | 0.04 | 0.12 | 0.08 | 0.19 | 0.37 |
| Na            | 0.22 | 0.19 | 0.31 | 0.22 | 0.37 | 0.43 | 0.38 | 0.50 | 0.23 | 0.49 | 0.30 |
| K             | 1.43 | 1.40 | 0.57 | 0.53 | 0.46 | 0.24 | 0.17 | 0.14 | 0.17 | 0.53 | 0.46 |