

B-23 Water quality of selected wells in the upcountry of Sri Lanka

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Farmers in the upcountry use high rates of chemical and organic fertilizers. Therefore, drinking water could be polluted with different plant nutrients.

Water samples were collected monthly from 40 drinking water wells in the upcountry beginning February 1995 for a period of 12 continuous months in the intensive vegetable growing areas of Badulla and Nuwara Eliya districts. Water samples were analyzed for pH, Electrical Conductivity (Ec), Na, K, Ca, Mg, P and NO_3^- .

In general, pH values of well water in Badulla and Nuwara Eliya districts were below 7. In the case of well- water, 68% and 87% of wells had pH below 7 in Badulla and Nuwara Eliya districts, respectively. In 97% of the well water in Badulla district and 85% of the well water in Nuwara Eliya district the electrical conductivity was up to 0.4 ds/m. Sodium content of the majority of well water collected in both districts ranged from 5 to 10 mg/l. This was 67% and 55% of the samples in Badulla and Nuwara Eliya districts, respectively. Potassium levels in well waters were up to 15mg/l in Badulla and Nuwara Eliya districts.

However, in both districts, majority of the samples (73% Badulla and 68% Nuwara Eliya) had K content up to 5 mg/l. In general 80% of water samples collected from both Nuwara Eliya and Badulla had calcium upto 2 mg/l. Of the wells sampled in the Badulla and Nuwara Eliya districts, 71% and 92% respectively, had water with Mg content up to 8 mg/l.

Phosphorus is extremely low in the well waters. Majority of the samples in both districts had P up to 0.01 mg/l.

In both districts, water in sampled wells had NO_3^- content up to 2 mg/l which is an acceptable level of NO_3^- in drinking water according to WHO standards. These findings show that there are substantial amounts of some plant nutrients in the drinking well water in the upcountry.