The leaves were sampled in Nov. 1984 and Mar. 1985 from the Kisii, Kericho, Nakuru, Nyahururu, Naivasha, Limuru, Karatina and Kibwezi areas. The results indicated significant differences in nitrate-N contents and thiocyanate ions in the leaves from various areas. Whole leaf nitrate-N contents ranged from 0.03% (Naivasha) to 0.13 % dry matter (Nakuru) for Nov. 1984 samples and from 0.04% (Naivasha) to 0.08% (Kisii) for Mar. 1985 samples. Thiocyanate ions ranged from 159 (Nakuru) to 490 (Kericho) and from 502 (Karatina) to 2804 (Limuru) µg KSCN/g dry matter for Nov. 1984 and Mar. 1985 samples, respectively. The results also showed significant differences between petioles and laminas for both substances. Nitrate-N contents were significantly higher in petioles than in laminas. Lamina nitrate-N values were 19.5 and 13% of those of the petioles in Nov. 1984 and Mar. 1985, respectively. Differences between petioles and lamina thiocyanate ions were significant for the Mar. 1985 samples only. Thiocyanate ions in the petioles were 40% less than those in the laminas.