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Characterization of soil nutrients from leafy spurge patches

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Soil samples were taken from 10 sites in Marshall and Roberts counties, South Dakota which were infested with leafy spurge. Analysis of these samples indicated differences in nutrient levels between soils inside and outside of the infestation. However, little consistency was found among the sites as to the nutrients which varied or the depth at which differences occurred.

Nitrate levels were higher inside the leafy spurge infestation than outside in the upper 30 cm of soil at one site and at the 30 to 45 cm depth at another site. In contrast, at two other sites nitrate levels at the 30 to 45 cm depth were lower in infested areas than uninfested areas. Phosphorus and potassium levels were high inside infested areas than outside on two and three sites respectively. No differences were found in calcium levels at any of the sites. Magnesium levels were higher inside infested areas than outside on two sites and lower inside than outside on one site.

High pH inside a leafy spurge infested area may have affected micronutrient availability at one site. Differences in magnesium and iron levels observed at three other sites appeared to be unrelated to pH. Zinc levels were higher inside of infested areas than outside at one site. No differences in copper levels were noted.

Statements that leafy spurge becomes established because of nutrient imbalances are not supported by these results. Research to determine the effect of fertilizing on control of leafy spurge is continuing.