THE effects of limestone on the growth and nodulation of legumes are varied and complex. It is thought by some investigators that the main function of calcium in plant growth is that of neutralizing the soil acidity, whereas others are of the opinion that the most important role played by calcium is that of a plant nutrient.

Many investigators (7, 8, 17, 19, 20, 22) have reported beneficial effects due to liming and inoculation of legumes. Walker and Brown (21) obtained results showing that certain legume bacteria in the soil are favorably influenced by the application of limestone.

Albrecht and Davis (2) found that where small amounts of calcium were used soybeans were readily attacked by disease and only poor growth occurred, while with increased amounts of calcium, growth improved and seemed to be normal, but only as still greater amounts of calcium were available to the plant would nodulation occur. Allison and Ludwig (4) suggested that nodule formation will not occur unless there is present a rapid growth of root tissue and that factors retarding rapid root growth also retard nodulation. Truog (18) observed that roots of alfalfa plants grown in acid soils may not be infected even though there are present large numbers of the desired legume bacteria in the soil.

Nodulation and plant growth of legumes have been studied by various investigators when a part of the roots were grown in acid soils and a part in limed soils. Karraker (10) noted that the effect of soil reaction on alfalfa is localized and affects only that part of the roots directly in contact with the acid soil. Albrecht and Davis (3) and Doolas (6) obtained similar results by growing soybeans in the greenhouse with the roots extending partially through acid zones of soil ranging in

1Journal Paper No. J489 of the Iowa Agricultural Experiment Station, Ames, Iowa. Project No. 405. Received for publication August 30, 1937.

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3Figures in parenthesis refer to "Literature Cited", p. 8.