PLACEMENT OF DOLOMITE, SUPERPHOSPHATE, AND
BASIC SLAG FOR SOYBEANS, AUSTRIAN WINTER
PEAS, AND VETCH

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THE importance of calcium and phosphorus for nitrogen fixation and the growth of legumes is generally recognized. The comparative value of small amounts of limestone in the drill and large amounts broadcast has been investigated (1, 2, 3, 4, 5, 6, 7). Small amounts of limestone in the drill with the seed often produce excellent increases in the yield and in the nitrogen fixed by legumes. However, Klingebiel and Brown (5) found that fixation of nitrogen was considerably better where the larger quantities were broadcast. They also found that applying lime in the row with the seed produced larger yields of alfalfa containing a higher nitrogen content than applying the same quantity of lime on each side of the seed at a distance of half an inch from the seed.

The purpose of this paper is to report data on the placement of small amounts of dolomite, superphosphate, basic slag, and muriate of potash in the drill relative to soybean, Austrian winter pea, and vetch seed.

EXPERIMENTAL

The test on placement of dolomite, superphosphate, and muriate of potash for soybeans was conducted on Lufkin clay soil of pH 4.65, and for Austrian winter peas on Myatt fine sandy loam of pH 4.5. The placement of basic slag test for vetch was conducted on Myatt fine sandy loam of pH 4.5. The plots were 1/400 acre in size. Each plot was a single row 3.5 feet in width. The seed were sown by hand in a single drill. They were covered approximately 2 inches deep. The soybean seed were planted approximately 2 inches apart. The variety of soybeans was Biloxi. The vetch and Austrian winter peas were sown at the rate of 30 and 40 pounds per acre, respectively.

The dolomite and superphosphate were applied at the rate of 200 pounds of each, and basic slag at the rate of 400 pounds per acre. Muriate of potash was applied at the rate of 0, 50, 100, and 200 pounds per acre. The fertilizers were applied in turning plow furrows made at different depths and distances from the seed, as indicated in the respective tables. There were six replications of each treatment. The data are reported in Tables 1, 2, and 3. All seed were inoculated unless otherwise indicated.

RESULTS AND DISCUSSION

EFFECT OF PLACEMENT OF DOLOMITE, SUPERPHOSPHATE, AND MURIATE OF POTASH RELATIVE TO SOYBEAN SEED ON YIELD OF SOYBEANS

Where superphosphate was placed in contact with the seed and the