THE VALUE OF LIMING IN A CROP ROTATION WITH AND WITHOUT LEGUMES.

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This is a brief record of certain experiments conducted by the New Jersey Agricultural Experiment Station. These experiments have been in progress for thirteen years and deal in part with the lime factor in the transformation and accumulation of nitrogen in soils. The land used for these experiments had been neglected for many years prior to 1908. The information at hand seems to indicate that lime had not been used on this land for 25 or 30 years prior to the beginning of the experiments. In fact, there is no evidence that this land had ever received an application of lime. At the time of the beginning of the experiments lime requirement determinations were made by the Veitch method. This showed a lime requirement of about 1,600 to 2,000 pounds of lime (CaO) per 2,000,000 pounds of soil.

In the spring of 1908 the field was laid out in twentieth-acre plats. These have been used since for nitrogen availability studies as well as for nitrogen accumulation studies. Hence, different rotations have been employed. Some of them include legumes; others do not. The rotation used in connection with Plats 1-A to 20-B consists of corn, oats, wheat, and timothy for two years. The rotation used in connection with Plats 21 to 27 consists of corn followed by rye, vetch, and crimson clover as a cover crop; oats followed by soybeans and cowpeas as a cover crop; wheat; and timothy and clover for two years. The rotation used in connection with Plats 28 to 34 consists of corn followed by rye, vetch, and crimson clover as a cover crop; potatoes; rye; and timothy and clover for two years. The rotation on Plats 35 to 41 consists of corn with rye, vetch, and crimson clover as a cover crop; potatoes with rye as a cover crop; tomatoes with rye, vetch, and crimson clover as a cover crop; lima beans with rye, vetch, and crimson clover as a cover crop; and cucumbers with rye and vetch as a


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