Organization of the farm business is primarily the choice of the farm operator. Choices are made among crops, crop sequences, animal enterprises, cultural practices, and technological inputs imposed on the land resource with the goal in mind to maximize net returns or at least to make a reasonable living. There has been a gradual transition in Midwest agriculture since the 1930’s from on-farm sources of nutrients and pest control supplied through manure, crop rotations, and mechanical tillage to off-farm sources of nutrients and pest control through fertilizers, insecticides, and herbicides.

These changes affected the entire farm firm; livestock systems, which were small mixed enterprises, have become large, single-species units or have completely vanished into large cash grain enterprises. Current agriculture systems, however, have incorporated many management aspects of their predecessors such as utilization of crop residues, animal manures, and cropping sequences; even if the cropping sequence involves a simple corn-soybean system on a grain farm.

The purpose of this discussion is to share some of the available information on the effect of legumes in a crop rotation on yields of corn (Zea mays L.) and yield response to applied N. This information has been obtained primarily from crop rotation studies that were established in the 1950’s at six outlying research centers on different major soils in Iowa.

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