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A Quantitative Study of the Early Weed Stage of Secondary Plant Succession in Central Iowa

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A QUANTITATIVE STUDY OF THE EARLY WEED
STAGE OF SECONDARY PLANT SUCCESSION
IN CENTRAL IOWA

J. M. AIKMAN AND HELEN F. BARR

Count-list and chart quadrats, camera-sets-frequency and frequency-abundance determinations were used to compare the vegetation of 28 fields in Story and Boone counties during the first growing season following cultivation. Similarities and differences in growth response as well as in floristics were tabulated and evaluated.

There seemed to be little relationship between the frequency and constancy of the species and previous cultural treatment although there was a definite relationship between their abundance and previous cultural treatment. By the end of August, in the drought year of 1934, sufficient top cover had developed to reduce to an appreciable degree the force of the rain water falling on the areas: 34.5 per cent cover to 91 per cent cover with an average of 58 per cent.

Annuals which are effective aggregants because of abundance of non-motile seed and ease of establishment (*Setaria viridis*, *Setaria glauca* and *Ambrosia trifida*) were found to be dominant in most of the communities the first year. *Setaria viridis* had greater frequency and frequency-abundance than any other species although several of the species have more seeds per plant.

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STUDIES IN THE REDISTRIBUTION OF SOME PHYTO-
PATHOGENIC SPECIES OF BACILLUS

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The genus *Bacillus* as recently defined excludes non-endospore formers which necessitates a redistribution of the phytopathogenic species. The studies from which this preliminary report is taken