

The Effect of Ecosystem Stress on the Abundance and Biomass of Leafhoppers (Homoptera: Cicadellidae) on the Shortgrass Prairie^{1,2}

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ABSTRACT

Shortgrass prairie leafhoppers, in environmental stress experiments on the IBP Colorado Grassland Biome site, responded positively to resource enrichment in the form of water and nitrogen by tending to concentrate within replicated plots receiving a water treatment and within those which received both water and nitrogen.

Key Words: Insects, leafhoppers, ecosystem stress, grassland, Cicadellidae, Homoptera.

INTRODUCTION

Leafhoppers feed by piercing plant tissue, usually mesophyll, and sucking up plant sap. Abundant, extensive injury, known as hopperburn, may then result to the plants. Direct damage caused by leafhoppers is outweighed in economic significance by that caused by the virus diseases that many species transmit to plants. Little has been written about the ecology of grassland leafhoppers, despite the large numbers of species which are known to occur on range and pasture grasses (Watts et al., 1989). The few published references were summarized by Waloff and Solomon (1973) in their study of the leafhoppers of acidic grassland in England.

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