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Rodent Populations and Crop Damage in Minimum Tillage Corn Fields

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No-till and disced cropfields were examined in southwest Iowa to determine small mammal population densities, movements, and impacts of rodent depredations on corn seedlings. Two replicates of the treatments corn planted into. corn stubble, corn planted into chemically treated sod, and corn planted into spring-disced fields were studied during the **1982** and **1983** growing seasons. Grids of 100 Sherman live traps were established at the edge and middle of each field to determine rodent densities and document possible encroachment of small mammals from nearby habitats. Trapping experiments were conducted for 6 consecutive days during May, August, and November. To assess crop damage, **5 164 ft. (50 m)** transects were established in the edge and middle of each field. Corn seedlings were examined every other day for the first 10 days post-emergence.

Deer mice (*peromyscus maniculatus*) dominated communities of small mammals comprising 71 and **69%** of all captures in **1982** and **1983**, respectively. Thirteen-lined ground squirrels (*SpP,rmoohilus tridecemlineatus*) composed 14 and **12%** of all captures in the respective years. Total individuals captured in both y years were **199, 182,** and **223** at edge locations on corn-corn, corn-sod and spring-disced fields, respectively. At middle grid locations, **180, 150,** and **216** individuals were captured for these respective fields. A total of **9** species were represented on the **3** tillage treatments; **8** on corn-corn fields, 7 on corn-s-od fields, and **6** on spring-disced fields. Shannon's diversity values (H') for rodent communities in corn-corn treatments were **0.32** and **0.52** (middle and edge, respectively) **0.43** and **0.45** for corn-sod, and **0.21** and **0.42** for spring-disced fields.

Rodent damage resulted' in complete mortality to plants damaged because detected damage was from digging. Overall, damage caused by rodents (0.0%) was less frequent than insect (12.1x), weather (**9.5K**), and mechanically related (**4.5x**) damages.