PRELIMINARY SURVEY OF PLANT PATHOGENS
PRESENT IN CORN AND SOYBEAN FIELDS IN
SOUTHEASTERN SOUTH DAKOTA

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ABSTRACT

Southeastern South Dakota fields of corn (Zea mays L.) were surveyed for two foliar diseases. Fields were examined during August when field corn plants were past tassel and ears were filling. Survey method consisted of a thirty minute random walk along and across corn rows recording presence of Ustilago maydis (DC.) Cda., common corn smut, and Puccinia sorghi Schw., common maize rust. Incidence and severity were examined in five fields, one cropped without the addition of chemical fertilizers, herbicides, or pesticides (organic), and the other four cropped with the use of chemicals (conventional). Common smut was clearly visible on tassel ears, but not regular ears, in the field cropped organically, was not visible in one of the conventionally cropped fields, and was common in each of the other fields cropped conventionally. The survey also examined incidence and severity of common maize rust in these fields, and preliminary results suggest that differences may have been present among the fields by cropping practice. In the field cropped organically, one corn plant and the adjacent downwind plant were the only plants that exhibited small rust pustules. In contrast, corn plants in each of the conventionally cropped fields exhibited rust pustules in varying amounts, the most dramatic of which was one conventionally cropped field in which the leaves of each corn plant examined exhibited multiple rust pustules. The apparent differences among organic and conventional fields will be re-examined in 1996. In conclusion, common smut and rust were present in varying incidence and severity in southeastern South Dakota corn fields examined during summer 1995.