OCCURRENCE OF *Fusarium* spp. FROM SLOVAKIA MAIZE KERNELS

Antónia Šrobárová

Institute of Experimental Phytopathology and Entomology SAS, Nádražná 52, SK-900 28 Ivanka pri Dunaji Slovakia

SUMMARY

Twenty-six samples of maize kernels collected at harvest time from geographically different corn field in Slovakia were examined for the occurrence of *Fusarium* species. The most frequently species were: *F. moniliforme*, *F. proliferatum*, *F. subglutinans*. Other species isolated included *F. graminearum*, *F. semitectum*, *F. nivale*, *F. anthophyllum*, *F. coreuleum*.

Key words: *Fusarium*, maize, ear, Liseola

INTRODUCTION

Fusarium species are common pathogens of the maize plant, causing stalk and ear rot (Booth 1971). The most common *Fusarium* species isolated from maize ears is *F. moniliforme* Sheldon as well as *F. graminearum* (Schwabe) (Logrieco et al. 1993). In Slovakia beside them *F. oxysporum*, *F. culmorum*, *F. avenaceum* has been found (Drimal 1982). The aim of this study was to investigate namely the occurrence of *Fusarium* species of Liseola section.

MATERIAL AND METHODS

During 1995-1996 harvest season, twenty-six maize kernel samples we collected from different locations throughout the major maize producing areas (Table 1). Kernels were surface -disinfected for 1 min in 1 % NaOCl. After 2 sterile water rinsing 20 kernels were placed on plates with PDA and incubated at 22 °C for 10-14 days under 10/14 h photoperiod. Single-spore culture were prepared and identified (Booth 1971, Marasas et al. 1984)

RESULTS AND DISCUSSION

The occurrence and distribution of *Fusarium* species identified is summarised in Table 1. Eight *Fusarium* species were isolated from the 26 samples and included, in percentage, *F. moniliforme* 72 %, *F. proliferatum* 52 %, *F. subglutinans* 40 % (Wollenweber, Reinking) Nelson, Tousson and Marasas. Along with these species, always found together (up to 8 %) *F. graminearum* (Schwabe), *F. sambucinum* Funkell var. *coeroleum* Wollenweber, *F. semitectum* Berkeley, Ravenel, *F. nivale* (Fr.) Ces., *F. anthophyllum* (Braun) Wollenweber. *Fusarium* species, which were determined in stalk in 1980-81 (Drimal 1982) hasn't been found (r findings indicate that all species of section Liseola occur in maize kernels in Slovakia. The *Fusarium* isolates found to belong mainly to *F. moniliforme* and together but less frequently to *F. proliferatum*. The close association of these two species could be because of the fact that they show very similar behaviour on maize. They can grow together without inhibition at identical optimum growth temperature (Burgess et al. 1988). *F. subglutinans* is the most prevalent fungi associated with maize in Africa (Marasas et al. 1984), Europe (Wellacher 1991, Chelkowski 1989), North America (Leslie et al. 1990), but not in south Italy (Bottalico et al. 1989). The presence of high levels of *Fusarium* spp. was associated with the high temperature in silky stage and a wet period during a ripening. The high incidence of *Fusarium* sp., section Liseola suggests investigation on the capability to synthesise toxins.