

HISTOPATHOLOGY OF CORN INFECTED BY *Ustilago maydis* CASUAL AGENT OF COMMON CORN SMUT *

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(Received: 8.6.2010; Accepted: 12.2.2011)

Abstract

Histopathology of fungus *Ustilago maydis* causal agent of common corn smut was investigated in exposure to both light and electron microscopy in cultivars SC301, SC647 and DC704 that were known before as sensitive, semiresistant and resistant cultivars, respectively. For providing fungal inoculum, mixture of teliospores were collected from Khozestan province, then cultured in CMA and PDA + 10% dextrose media and incubated 5 days at 25°C. Fungal inoculums were inoculated under 2 different methods, injection and spray; then samples were collected and fixed 2, 4, 11 and 25 days after inoculation. 18 days after inoculation, disease symptoms were first observed in injection and then spray method. Fungal penetration in host by scanning electron microscopy showed that penetration is possible both in direct and indirect ways and fungus makes a swollen and brilliant appressorium. Light microscopy of fungal extension showed that infection cells were larger than intact ones and extension of fungal hyphae were first intercellular and then intracellular. Some intracellular branches were lobed and others terminated in pointed finger like or other kinds of swelling. At the site of teliospore formation, cavity of mycelium was formed that contained both mature and immature teliospores. These young teliospores were surrounded with gelatinous sheath. Corn infection happened easily under control conditions and made an appropriate system for investigation of some aspects of pathogen interaction.

Keywords: Common corn smut, *Ustilago maydis*, teliospore, Appressorium, Histopathology, *Ustilago* type.

See Persian text for figures and tables (Pages).

*: A Part of MSc. Thesis of the First Author, Submitted to College of Agric., Shahid Chamran University of Ahvaz, Ahvaz, Iran.

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