

SMUT FUNGI PARASITIC ON CEREALS IN KASHKADARYA VILOYATE (ORDER USTILAGINALES)

Eshonkulov Najim

Candidate of Biological Sciences, Associate Professor
Karshi State Technical University

Eshonkulova Charos Najmiddinovna
Master, Karshi Turan University

Abstract

Smut fungi parasitizing cereals in the Kashkadar region (Order Ustilaginales). The article studied the distribution of smut fungi on cereals in the Kashkadar region.

Keywords: Ustilaga, corn, sorghum, rye, host plants.

Introduction

Mycofloristic studies in the territory of the Kashkadarya region have not been carried out regularly. Rust fungi developing on cultivated and wild cereals have been identified most fully [12]. There are only fragmentary data on smut fungi in this region [3], [6], [7].

The proposed material was collected during route trips around the region during vegetation periods. A total of 400 herbarium sheets of cultivated and wild cereals (33 species from 23 rows) affected by smut fungi were collected (Table 2). Fungi of the Ustilaginaceae family are the most common. The genus Ustilago ranks first in the number of species affecting cultivated and wild cereals in the Kashkadarya region (Table 1).

Число видов разных родов Ustilaginas, паразитирующих на злаках в Кашкадарьском вилояте

Table 1.

Families	Childbirth	Number of species
Ustilaginaceae	Ustilago	21
	Tranzscheliella	1
	Sphacelotheca	6
	Sorosporium	3
Tilletiaceae	Tilletia	5
	Entyloma	2
Total		38

A similar quantitative ratio of the predominant species and classes of smut fungi has been noted in different Central Asia [7], [9], [1], [4], [12]. The predominant development of species of these

classes of the order Ustilaginales in the dry regions of the south of our country can probably be explained by the biological characteristics of smut fungi, in particular by the fact that the developing chlamydospores are protected for a long time by the tissues of host plants from the adverse effects of solar radiation and dry air. In the Kashkadarya region, smut fungi develop unevenly in different seasons. The greatest number of species is recorded in spring and early summer. The decrease in the number of smut fungi species in autumn can be explained, firstly, by the fact that by this time grain crops have been removed from the fields, and, secondly, by the fact that by the end of summer, due to the onset of intense heat, the vegetation of wild grasses in desert areas ceases. At this time, only *Sorghum halepense*, *Aeluropus litoralis*, *Phragmites communis* and some others are found on irrigated lands. On individual specimens of the first two species, inflorescences affected by *Sorosporium reilianum* f. *Sorghii*, *Sphacelotheca aeluropi* are clearly visible, and on specimens of the third, irregular cracks are clearly visible, from which the powdering spore mass of *Ustilago grandis* protrudes. At this time, corn continues to be grown on cultivated lands, and here plants affected by *Ustilago maydis*, the causative agent of smut, are found.

Thus, smut fungi in the Kashkadarya region develop on all cultivated cereals [12]: wheat (1 fungus species), (2 species), oats (2 species), corn (2 species), rye (1 species), sorghum (1 species). Since the damage caused by these fungi is quite large, it is necessary to constantly introduce new varieties that are more resistant to diseases into the crop, and also to pay more attention to pre-sowing seed treatment.

Table 2 Smut fungi parasitize on cereals in the Kashkadarya region

<i>Host plants</i>	<i>Smut mushrooms</i>	<i>Collection area</i>
<i>Aegilops cylindrical</i> Host	<i>Ustilago passerine</i> Fisch V.Waldh	Yakkabogsky
<i>Ae. Cylindrical</i> Host	<i>U. tuberculata</i> Col	Kitabsky
<i>Ae. Squarrosa</i> L	<i>U. tuberculata</i> Col.	Yakkabogsky
<i>Agropyron repens</i> P.B.	<i>U.elytrigiae</i> Col.	Shakhrisabzk
<i>A.trichophorum</i> Richt	<i>U.agrestis</i> Syd.	Kasbinsky
<i>Avena fatua</i> L.	<i>U.avenae</i> Jens.	Shakhrisabzk
<i>A.sotiva</i> .L.	<i>U.kolleri</i> Wille.	Shakhrisabzk
<i>Bromus japonicas</i> Thunb	<i>U.bromivora</i> Fisch v.Wagh.	Kitobsky
<i>B.macrostachys</i> Dest	<i>U.bromivora</i> Fisch v.Wagh.	Chirokchisky
<i>B.oxyodon</i> Schrenk	<i>U.bromivora</i> Fisch v.Wagh.	Kasbinsky
<i>Cynodon dactylon</i> Pers.	<i>U.cynodontis</i> P.henn.	Kasbinsky
<i>Dactylic glomerata</i> L.	<i>U.salvei</i> Berk. Et Br.	Chirokchisky
<i>Echinochloa crusgalli</i> Roem. Et Schult.	<i>u.trichophora</i> Kunze	Kasbinsky
<i>Eremopyrum buonaparis</i>	<i>U.turcomanica</i> tranz.	Karshinsky
Nevski.	<i>U.turcomanica</i> tranz.	Kasbinsky
<i>Hor deum distichum</i> L.	<i>U.hordei</i> Largerh.	Kasbinsky
<i>H.vulgare</i> L.	<i>U.hordei</i> Largerh.	Kitobsky
<i>H.vulgare</i> L.	<i>U.nuda</i> Rostr.	Shakhrisabzk
<i>Phragmites communis</i>	<i>U.grandis</i> Fr. <i>U.poarum</i>	Shakhrisabzk
<i>Poa nemoralis</i> L.	<i>U.vavilovii</i> Jacz.	Kitobsky



Secale cereal L.	U.neglecta Niessl.	Kitobsky
Seteria glauca P.B.	U.neglecta Niessl.	Kitobsky
S.viridis Beauv	U.Williamsii lavrov	Kitobsky
Stipa capillata L.	U.phryica magn.	Kitobsky
Thaenitherum crinitum	U.tritici jens.	Guzarsky
Nevski Triticum aestivum L.	U.maydis Cda. Tranzscheliella otophora	Kitobsky
Zea mays L.	Lavrov	Kasbinsky
Spita orientalis trin.	Sphacelitheca aeluropi	Karshinsky
Aeluropus litoralis	Sph. Andropogonis Bud.	Kitobsky
Pari.	Sph. Schweinfurthiana Sacc	Chirakchinski
Andropogon ischaemum L. Imperata cylindrica Beauv. Panicum miliaceum L. Sorghum halepense pers	Sph.panici-milacei Bud. Sph.holci Jacks.	Everywhere

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