SJIF Impact Factor: 6.260| ISI I.F.Value:1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 5 | Issue: 2 | February 2020 - Peer Reviewed Journal

MYCOBIOTA SEEDS OF ONION IN THE CONDITIONS OF THE TASHKENT REGION OF UZBEKISTAN

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ABSTRACT

In this article the issue of avoiding the pythium rot on onion upon storage is considered also the article presents the results of studying the composition of onion diseases and their pathogens. 2013 to 2019 A total of 56 species from 29 genera of phytopathogenic fungi were identified, of which 27 species were first noted onions in Uzbekistan. The most widespread and harmful diseases of onions upon storage in Uzbekistan is rottenness, including Fusarium blight, black rot and blossom blight (aspergillosis and penicilliosis), also rottenness, caused by imperfect fungi, are noted, which cause: Botrytis alii, B. cinerea, Aspergillus niger, Penicillium expansum, Trichothecium roseum, Cladosporium herbarum. Rare lesions caused by the pathogens Urocystis cepulae and Puccinia alii were less common.

KEYWORDS: *onions, storage, onions diseases, fungi micromycetes, blossom blight, Fusarium blight, fungicide, consumption rate, development intensity, biological efficiency.*

INTRODUCTION

Agriculture produces basic food products, as well as raw materials for food and other industries. The main objective of the agro-industrial complex is to improve product quality, eliminate its losses at all stages of production, transportation and storage. The task of agriculture is not only to create a crop, but also to protect plants from pathogens and pests.

Due to its nutritional value, the value of onion is not in doubt. The study of plant diseases, the composition of pathogens and their biology is the first step to further study the environmental laws of the formation of mycobiota, and also forms the basis for the development and optimization of a system of measures to protect the crop from harmful organisms.

Phytopathogenic micromycetes - pathogens of plant diseases causing damage to agriculture cause the natural interest of mycologists and phytopathologists, because, one of the serious reasons that impede the cultivation of crops is the spread of diseases. The yield loss of onion crops from various diseases during the growing season and storage is at least 10% annually, and in adverse years - up to 30-50% and higher (Nikitina, 2008).

Despite the enormous importance of onions, the mycologists and phytopathologists of Uzbekistan practically do not cover the composition of onion pathogens and measures to against them.

Between 2013 and 2019 we conducted our own research to identify the composition of onion diseases on the fields of farms in the Tashkent region and in vegetable stores in Tashkent and the Tashkent region and to develop a system for combating onion diseases. An analysis of the data obtained is given in this material.

Onion sowing was carried out in the winter and spring sowing periods of 2013-2019. Winter sowing of onions was carried out in October, harvesting in late April and early May, spring sowing in March, harvesting in September.

During the study period, 56 species of phytopathogenic micromycetes from 29 genera, 11 families, 7 orders and 4 p / divisions were identified. The revealed composition is presented in table 1. Of

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these, 27 species were first recorded onions in the conditions of Uzbekistan.

Of the total number of species, the most common in the field in the Tashkent region were 9 species. The obtained data are shown in table 1.

Table 1.

The composition of the identified major pathogens from onion crops.

Subdivision	Family	Genus	Form
Mastigomycotina	Peronosporaceae	Peronospora Schr.	P.schleideniana Cornu
Basidiomycotina	Tilletiaceae	Urocystis	U.cepulae Frost.
	Pucciniaceae	Puccinia	P.allii (D.C.) Rudolph
Deuteromycotina	Moniliaceae	Botrytis Michel ex Fries	B.cinerea Pers. ex Fr.
			B. squamosa J.C.Walker
	Dematiaceae	Alternaria Nees ex Wallr.	A. porri (Ell.)Cif.
			A. niger v. Tieght.
		Cladosporium Lk. ex Fr.	C. herbarum Pers ex. Lk.
		Stemphylium Wallr.	S. botryosum Wallr.
			S.alii Oudem.
	Tuberculariaceae	Fusarium Lk. ex Fr.	F. oxysporum Schlech.

When analyzing the composition of the main diseases, it can be noted that the bulk of the identified mycobiota belongs to hyphal fungi (por. Hyphomycetfles) and one species causing downy mildew belongs to the order Peronosporales.

Starting in 2013, we most often and commonly observed onion crops were downy mildew or peronosporosis - Peronospora schleideniana Cornu. (= P.destructor), then fusarium rot and leaf blotch caused by species of the river Botrytis, Alternaria, Cladosporium, Stemphylium. Lesions caused by smut and rust caused by pathogens of Urocystis cepulae and Puccinia alii were less frequently observed.

The life process of fungi, their growth and development, as well as parasitic activity is largely determined by environmental conditions, where the combination of relative humidity and temperature are crucial for the nature of the development of the pathogen. The remaining elements (light, wind, atmospheric pressure, etc.) in most cases only correct the influence of the main factors [6].

Each fungus is characterized by a certain range of development temperatures with the presence of cardinal minimum and maximum points that determine the boundaries of the activity of this species. The best development of the pathogen occurs at optimal temperatures, which for most fungi are in the range of 18-250C (Yachevsky, 1935, Goiman, 1954, Garibova et al., 1975).

Despite the influence of temperature on the infection process, spore germination and growth rate of growth tubes, the value of this factor for infection is inferior to humidity.

The spores of many lower fungi, and specifically peronospore ones in our work, are very demanding on moisture and germinate in the presence of drip-liquid moisture (Gaponenko, 1972, Popkova, 1989). Less demanding are all forms of sporulation of rust, most of the gnarled, imperfect fungi that A.A. Yachevsky attributed to the group of mesophytes.

Therefore, the normal development of fungi occurs at the corresponding values of temperature and humidity, which in turn depends on the seasons of the year, which differ from each other in their climatic characteristics.

Our own observations show that the bulk of onion diseases, besides peronosporosis, are noted in the summer.

Peronospora schleideniana is observed in mid-spring, reaching maximum development of the disease in May. The first symptoms - yellowish spots with a superficial gray-violet bloom of the mycelium and pathogen spores, begin to appear in April, later the spots merge giving oppressed sluggish yellow leaves - the arrow of the plant. In early summer, plaque on the affected parts of the plant is practically not observed. Often secondary parasites settle on the affected parts of the plants, as a result of which the leaves are covered with a black coating.

Urocystis cepulae is observed in late spring (May) - early summer, when the leaves show a different shape and size of convex lead-gray swellings covered by the epidermis, which quickly blacken and crack, resulting in the release of a mass of black spores of the fungus.

Onion rust is most often observed in June-July, when uredinia is visible on the leaves, telium is observed in August-September.

Spotting caused by imperfect fungi was noted from the second half of May until the end of the growing season.

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CONCLUSION

Based on the foregoing, we can speak of a very abundant composition of phytopathogenic fungi and the main most harmful diseases of onions are peronosporosis, root rot and various spotting. The data obtained should form the basis of the control system with the help of integrated protection including agrotechnical, biological and chemical methods.

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