NOVATEUR PUBLICATIONS
INTERNATIONAL JOURNAL OF INNOVATIONS IN ENGINEERING RESEARCH AND TECHNOLOGY
[IJIERT] ISSN: 2394-3696 Website: ijiert.org
VOLUME 8, ISSUE 4, Apr.-2021

DISTRIBUTION OF POWDERY MILDEW DISEASES IN CUCURBITACEOUS CROPS AND MEASURES TO FIGHT AGAINST THEM

Rasulova Marxabo Burxonovna
Assistant. Andijan Institute of Agriculture and Agrotechnology.

Bostonova Surayyo Soliyevna
Assistant. Andijan Institute of Agriculture and Agrotechnology.

Fayzullayeva Odina Ibroximjon qizi
Student. Andijan Institute of Agriculture and Agrotechnology.

ABSTRACT
This article contains information on powdery mildew disease of cucurbitaceous crops in the conditions of Andijan region. In this case, it was studied the powdery mildew diseases in melons, squash and watermelons from the main cucurbitaceous crops, the propagation laws. The data obtained are of theoretical and practical importance in the protection of cucurbitaceous crops from powdery mildew diseases.

INTRODUCTION
Melons Cucumis melo L., squash Cucurbita pepo L. and watermelons Citrullus lanatus (Thub.) belonging to the cucurbitaceous crops group - Matsum. et Nakai have been grown in all countries due to their richness in vitamins, which are very important for the human body.

Powdery mildew fungi (Erysiphaceae) are of systematic, floristic and mi-cogeographic importance and of high practical importance due to pathogenicity in plants due to obligate parasites. Powdery mildew is one of the most common diseases in natural and cultivated plants. They are very dangerous and can damage plants in large areas in a short time.

In recent years, the range of powdery mildew diseases has expanded and is widespread in cereals, fodder crops, fruit, berries, vegetable-cucurbitaceous crops, as well as in fruit and ornamental plants. Powdery mildew is the most common and dangerous disease of melons, watermelons and other crops belonging to the family of melons in Uzbekistan (and in Central Asia in general). With them the plants are damaged in all growing season phases.

Powdery mildew mainly affects the leaves, leaf axils and stems of plants, on both sides of leaves are white, yellowish-brown or reddish-gray, a thin mold layer, then (at the end of the season) develop dark spots on them - cleistothecia; the leaves turn yellow, then turn brown and dry out. Mold is sometimes found on plant stems and leaf bands, and rarely on fruits. Powdery mildew-causing fungus overwinters with plant debris and cleistothecia in weeds (plantain, comfrey). In the spring, ascospores mature in the ascus inside them, the primary damage to the plants.

Powdery mildew in melons, squash and watermelons is caused by Erysiphe cichoracearum DC. f. cucurbitacearum Pot., Sphaerotheca fuliginea Poll. f. cucurbitae Jacz. ascospore fungi belonging to the order Erysiphales.

When plants are infested with E. cichoracearum, the dust is white, abundant, and often formed on the leaf surface, the fruit bodies - cleistothecia are poorly formed. Tumors of cleistothecia are short, unbranched. Up to 12 ovoid, leg ascus is formed in each cleistothecia. Each bag contains 2 elliptical, colorless ascospore. When the plants are infested with Sph. fuliginea f. cucurbitae, the dust becomes pinkish-gray and appears mainly on the leaf underside. They produce many cleistothecia with brown tumors. In each cleistothecia an almost round, yellow ascus is formed. The bag contains 5-8 elliptical, colorless ascospore.

During plant vegetation, the pathogen is spread by conidia. Primary damage to plants occurs through the ascospore, which are formed in the cleistothecia on the shed leaves.

Herbarium specimens collected from cucurbitaceous crops fields served as a source in the scientific work. Collection of samples was carried out during the entire vegetation period of the plants based on the route. Herbarium samples were prepared from diseased plant samples based on accepted methods.

Herbarium samples analysis was performed under laboratory conditions by microscopic and biological methods. Existing determinants (Pidoplichko, 1977-1978, etc.) and data of "Fungal flora of Uzbekistan" (1983-1997) were used to determine the micromycetes species composition.

RESULTS

Our observations were made in 2020 on watermelons and melons in the fields of the "Mamajon buva" farming in Ulugnor district of Andijan region, on melons, squash and watermelons in the fields of "Dolanali Bogbon" farming of Bulakbashi district, and in the fields of "Andijan scientific experimental station of the scientific research institute of vegetables, cucurbitaceous crops and potatoes".

Powdery mildew was registered in all melon plants parts planted as a secondary crop on 11.8 hectares of "Mamajon buva" farm in Ulugnor district. In observed fields all, the crops were treated twice with sulfur and the prevalence (8–12%) and powdery mildew disease development (0–30%, average 1–10%)in them did not reach dangerous levels.

During research when phytopathological analysis of collected herbarium samples, based on microscopic signs of pathogenic fungi, in the field of "Dolanali Bogbon" farming in Bulakbashi district of Andijan region Erysiphe cichoracearum DC. f. cucurbitacearum Pot. (the conidia size is 15-29x9-19 μm, with 19.4x12.7 μm average), a causative agent of powdery mildew, was reported to infect up to 10% of the plant, powdery mildew in watermelon (conidia 17-52x9-32 μm, average 31.6x21.0 μm) to 22%, and in melon (conidia 32-35x14-21 μm, average 33.0x18.3 μm) to 12% on "Mamajon Buva" farming in Ulugnor district. Sphaerotheca fuliginea Poll. f. cucumidis Jacz. species and forms were found to be the causative powdery mildew disease agent in melons in the field of Andijan scientific experimental station of the scientific research institute of vegetables, cucurbitaceous crops and potatoes.

Table – 1 Prevalence of powdery mildew in squash crops in Andijan region (2019)

District, farming	Crop type and area (ha)	Identified type and prevalence of the disease (%)
"Dolanali Bogbon" farming in Bulakbashi district	Squash 0,5 ha	Powdery mildew (10%) (Erysiphe cichoracearum)
	Melon 0,5 ha	The disease was not observed
	Watermelon 1,0 ha	Powdery mildew (22%) (Erysiphe cichoracearum)
"Mamajon buva" farming in Ulugnor district	Қовоқ 0,5 ha	Powdery mildew (14%) (Erysiphe cichoracearum)
	Melon 11,8 ha	Powdery mildew (12%) (Erysiphe cichoracearum)
	Watermelon 1,0 ha	Powdery mildew (18%) (Erysiphe cichoracearum)
"Andijan Scientific experimental station of the scientific research institute of vegetables, cucurbitaceous crops and potatoes"	Melon 0,5 ha	Powdery mildew (10%) (Sphaerotheca fuliginea)
	Watermelon 1,5 ha	Powdery mildew (18%) (Erysiphe cichoracearum)

Powdery mildew disease of cucurbitaceous crops is directly related to plant species and environmental conditions, at the same time, it is important to follow high agro-techniques and agricultural culture. In order to use in the direct fight against powdery mildew in Uzbekistan there were recorded two drugs- apparent sulfur (in the 15-30 kg/ha range) and Bayleton 25% w.d. With the first powdery mildew disease signs appearance in the crop, plants treatment with sulfur preparations slows down or completely stops the disease development. In high disease progression cases, Bayleton should be treated. If the disease continues to develop later, the treatment should be repeated; it is recommended to treat 5-7 times a year with sulfur, up to 3 times with Bayleton.

REFERENCES

1) Gerasimov B.A., Osnitskaya E.A. Pests and diseases of vegetable crops. M .: "Selkhozgiz", 1961, 536 p.
2) Kirgizbaeva Kh.M., Sagdullaeva M.Sh., Ramazanova S.S. and others. "The flora of mushrooms of Uzbekistan", -Tashkent :, -Izd. "Science"1985; - p. 198.
3) Pidoplichko N.M. Fungi are parasites of cultivated plants. Determinant in ZT.-Kiev :,1977-1978. – p. 79.
4) Khakimov R., Shchukina A. Breeding melon for disease resistance. Agriculture of Uzbekistan, 1996, №4, p.27-29.
5) Омонова, Н. М., Абдуллаева, Х. З., & Гофурова, Ю. К. (2019). ЭФФЕКТИВНОСТЬ ПРИМЕНЕНИЯ ФУНГИЦИДОВ ПРОТИВ ГРИБКОВЫХ БОЛЕЗНЕЙ ТОМАТА. In ПРОРЫВНЫЕ НАУЧНЫЕ ИССЛЕДОВАНИЯ КАК ДВИГАТЕЛЬ НАУКИ (pp. 91-94).
6) Омонова, Н. М. (2013). ПРИМЕНЕНИЕ ФУНГИЦИДОВ ПРОТИВ ГРИБКОВЫХ БОЛЕЗНЕЙ ТОМАТА. SCIENCE AND WORLD, 54.
7) Omonova, N. M. (2020). THE EFFECT OF DIFFERENT AIR TEMPERATURES ON THE GROWTH OF PATHOGENIC FUNGI IN TOMATOES. In Фундаментальные и прикладные научные исследования: актуальные вопросы, достижения и инновации (pp. 90-93).
8) Omonova, N. M., & Mukhtazar, K. (2019). Methods of fight against temperature diseases in natural damages. Indonesian Journal of Innovation Studies, 8.
9) MAHMUDJONOVNA, O. N., & MUHAMMADIYEVICH, B. F. Protection of Tomatoes From Phytophthora. JournalNX, 6(12), 384-389.
10) Saliyeva, R., Musaev, A., & Jumaeva, A. (2019). CLEARANCE OF THE EAST FRUIT BIOLOGY. Academia Open, 1(1).
11) Saliyeva, R. Z., Parpiyeva, M. Q., & Abdullayeva, G. D. (2019). BIOLOGY OF GRAPHOLITA MOLESTE AND METHODS FOR ITS DETERMINATION. In АКТУАЛЬНЫЕ ВОПРОСЫ СОВРЕМЕННОЙ НАУКИ (pp. 9-13).
12) Камбарова, М. Х., Расулова, М. Б., & Мўйдинова, М. (2019). РАСПРОСТРАНЕНИЕ МИКРООРГАНИЗМОВ В ПОЧВЕ. Академическая публицистика, (5), 115-117.
13) Камбарова, М. Х., & Расулова, М. Б. РАСПРОСТРАНЕННЫЕ БОЛЕЗНИ КАПУСТЫ В УСЛОВИЯХ УЗБЕКИСТАНА DISTRIBUTED DISEASES OF CABBAGE IN THE CONDITIONS OF UZBEKISTAN. ББК 65.2 С56, 111.
14) Мустафакулова, Ф. А., & Расулова, М. Б. (2019). ОСНОВНЫЕ ЗАДАЧИ ДЛЯ ПОЛУЧЕНИЯ БАКТЕРИАЛЬНЫХ БИОЛОГИЧЕСКИХ ПРЕПАРАТОВ. НАУЧНЫЙ ЭЛЕКТРОННЫЙ ЖУРНАЛ «АКАДЕМИЧЕСКАЯ ПУБЛИЦИСТИКА», 43.
15) Расулова, М. Б., Нуралиев, Х. Х., & Камилов, Ш. Г. (2013). ГРИБКОВЫЕ БОЛЕЗНИ БАХЧЕВЫХ КУЛЬТУР, РАСПРОСТРАНЯЕМЫЕ ЧЕРЕЗ СЕМЕНА. SCIENCE AND WORLD, 41.
16) Расулова, М. Б., Нуралиев, Х. Х., & Камилов, Ш. Г. (2013). ГРИБКОВЫЕ БОЛЕЗНИ БАХЧЕВЫХ КУЛЬТУР, РАСПРОСТРАНЯЕМЫЕ ЧЕРЕЗ СЕМЕНА. SCIENCE AND WORLD, 41.
17) Нуралиев, Х. Х., & Расулова, М. Б. (2020). Распространение болезни «мучнистая роса» на бахчевых культурах и меры борьбы с ней. Актуальные проблемы современной науки, (6), 81-83.