



THE DISEASE OF WATERMELON AND MELON WITH FLOUR MEWDEW ACTION OF FUNGICIDES

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Abstract. Several types of poliz crops are cultivated in the world. Researches are being carried out on the development of scientifically based effective measures to fight against diseases in order to fully satisfy the needs of the population for the products of polys crops. Melon fruit has long been used in folk medicine for the treatment of tuberculosis, bronchitis, anemia, kidney, heart, nerve, liver diseases and atherosclerosis. Watermelon is also widely eaten fresh in the world. The fruit contains 91% water, 6% sugar, 0.6% protein, 0.1% oil, a large amount of vitamin C, carotenoids (mainly lycopene), small amounts of various vitamins and mineral salts. 100 g of fruit contains 30 kkal of energy. Therefore, it is important to develop measures to combat diseases that damage melon and watermelon crops.

INTRODUCTION. The decisive conditions for the cultivation of poly crops and the production of abundant crops from their fruits are the use of modern, effective methods of proper feeding and watering of crops, protecting them from harmful arthropods and biotic and abiotic diseases. The range of abiotic diseases of cash crops includes observation of unfavorable environmental conditions, violation of agrotechnical rules (errors in feeding and watering, etc.) and some others.

Biotic or infectious diseases of crops are caused by various living organisms - fungi, bacteria, viruses and virus-like organisms, nematodes and some highly parasitic flowering plants. In this guide, we provide information about infectious diseases caused by phytopathogenic microorganisms and the main non-infectious diseases of polygenic plants. According to the literature data, there are more than 211 microorganisms in the world, including more than 90 fungi, 15 oomycetes, 17 bacteria, 1 phytoplasma, more than 57 viruses, 1 viroid and more than 30 species of nematodes cause disease. In addition to them, these crops are damaged by 4 types of high flowering parasitic plants. The prevalence and economic importance of these diseases are not the same.

Among their previously known and still the most dangerous diseases are grass wilting, rotting and dying, powdery mildew, peronosporosis, fusarium wilt, verticillium wilt, fusarium root, root rot. These include bud and fruit rot, ascochytois, anthracnose, alternariosis, and diseases caused by viruses and nematodes. Below is detailed information about the main,

widespread and economically important diseases of cash crops, as well as brief information about other diseases.

RESEARCH METHOD. The research work carried out in the farms of the Republic of Karakalpakstan specializing in the cultivation of sugarcane crops was analyzed.

A.A. Yachevsky [1917], N.A. Naumov [1937], N.M. Pidoplichko [1977], M.A. Litvinov [1967] are used to determine the type of fungi.

During the period of plant growth, regular observations were made every ten days in the places of permanent observation (stationary) and experiment. Depending on the natural and ecological conditions in the farms, the places for observation, the number of plants in the account or the fields were determined. In this case, the degree of spread of the disease, the type of plants, and the quality of agrotechnical measures were determined separately for each crop field. The prevalence of the disease was calculated according to the following indicators.

RESEARCH RESULTS AND THEIR ANALYSIS. Powdery mildew disease is reported in the literature to be caused by more than 6 species of true fungi (Mycota), phylum Ascomycota, order Erysiphales, family Erysiphaceae in cultivated and some wild crops. Among these species, *Podosphaera xanthii* is the most aggressive and the most common in poly crops in the world, followed by *Golovinomyces cichoracearum* and *Leveillula taurica* in 3rd place. The remaining species (*Erysiphe betae*, *Erysiphe cruciferum*, *Golovinomyces orontii*) are likely to be found in cucumbers only in small numbers, since the number of published reports on the occurrence of these species in cucumbers and other poly crops is very small.

Podosphaera xanthii and *Golovinomyces cichoracearum*. These 2 species are cosmopolitan species that can be found on all continents of the world in open fields and greenhouses. The first of them is the dominant species in terms of occurrence in the world and is more common in tropical and subtropical climate regions, while the second species is relatively rare and its distribution area is limited to regions with a temperate climate and cold spring and early summer. limited.

It has been reported that *P. xanthii* is the most common species found in cucumbers and melons in Central Asia, while *G. cichoracearum* is rare, mainly found in mountainous and mountainous areas. In Uzbekistan, *G. cichoracearum* grows on cucumbers, watermelons, hard-skinned gourds, and cantaloupe in plains, high hills, and mountainous regions, while *P. xanthii* (under the names *Sphaerotheca fuliginea* f. *cucumidis* and f. *cucurbitae*) grows on cucumbers, melons, and hard-skinned pumpkins. It has been recorded in all places in still and large-fruited pumpkins. Powdery mildew is of great economic importance, and due to this disease, 40-50% of the yield of cucumbers can be lost in the fields and in closed soil.

Disease symptoms. *P. xanthii* and *G. cichoracearum* infect all types of crops (watermelon is less common). The first symptoms of the disease appear on the lower, old leaves, and later on young leaves and stems. White or pale yellow spots appear on leaves, leaf and fruit bands, and stems of plants. They are first formed on the lower side of the leaves, then on both sides. The spots grow and enlarge, and a white powdery dust (colony) consisting of conidiophores and conidia is formed on them.

Sometimes, in rare cases, small, black dot-shaped chasmothecia of pathogens can be formed among the dust. Infected leaves gradually turn yellow, lose their shape, turn brown and become brittle and brittle. At the end of the damage, individual leaves or the whole plant dies. Fruits rarely have dew. Fruits of infected plants are exposed to sunlight, shrink in size, pale and taste bitter.



Disease development. Powdery mildew fungi are obligate parasites (biotrophs) and live only on living crops. In greenhouses, they can be kept in winter and summer. In most cases, they overwinter in live weeds. Conidia, the source of primary infection of powdery mildew, can be brought to the fields of regions with cold winters by air from southern regions and/or transferred to fields from greenhouses with seedlings.

It has not been determined with which propagules and where powdery mildew fungi winter in Uzbekistan. After primary infection, under favorable weather conditions, powdery mildew develops rapidly and produces large quantities of new conidia in just 3-4 days. In this case, when the relative humidity of the air is higher, the colonies (bubbles) of pathogens grow, and in dry air, their conidia are formed. Conidia are dispersed within the field and from field to field over long distances by air. Conidia can infest dry leaves and other organs even in the absence of free (drop) moisture, with relative humidity between 50-90%, even at 20% humidity. Cardinal temperatures for disease development are 10-32°C, optimum 20-27°C; The disease does not develop at a temperature of 37°C and above.

In general, higher relative humidity is favorable for *P. xanthii*, and lower (drier) for *G. cichoracearum*. The best conditions for the disease are the application of the highest rates of nitrogen fertilizers to the field, good growth and thickening of the crop, warm temperatures and the presence of dew, and a lack of sunlight (shade). Powdery mildew makes plants prone to ascochytirosis and other diseases.

Leveillula taurica is a cosmopolitan species that is more common in warm, dry regions of the world, including Uzbekistan, Tajikistan, Kazakhstan, Kyrgyzstan, and Turkmenistan in Central Asia, and the fungus is common in Uzbekistan. and recorded in species of the genus *Cucumis*. *L. taurica* is a polyphagous species that infects many types of plants in addition to rice crops, it is common in onions, tomatoes, sweet and hot peppers, eggplant, cotton, and garlic. At the moment, powdery mildew caused by *L. taurica* is not a very important disease in most of these crops. At the same time, in some countries, powdery mildew caused by *L. taurica* is an important and economically important disease of cucumbers, melons and pumpkins in open fields and especially in greenhouses.

Disease symptoms. Symptoms of the disease on the leaves of cucumbers and other leafy plants are very different from those caused by *P. xanthii* and *G. cichoracearum*. In this case, chlorotic, pale spots appear on cucumber leaves, and later they are covered with dust.



Figure 1. Damage of rice crops by powdery mildew.

Measures to combat powdery mildew. For planting poly crops, it is necessary to choose fields that are open, well-ventilated, not shaded by trees, and located far from other poly crops. It is highly effective against the disease if you don't plant the plants in the same field for 2 years. The most important thing is to carry out the processing on time, if the processing is carried out late, the crop cannot be effectively protected with the help of fungicides. At the same time, a serious problem that always threatens the effectiveness of chemical control is the regular emergence of new, fungicide-resistant pathotypes of powdery mildew fungi. Such resistant strains appear especially quickly compared to "one-target" systemic fungicides - benzimidazoles (benomyl, thiophanate methyl, carbendazim) and strobilurins (azoxystrobin, pyraclostrobin, etc.). In Europe, strains resistant to pyrimidines (fenarimol), imidazoles (imazalil) and bupirimat have been found.

Table 1

Watermelon damage by powdery mildew

(Production experience, Republic of Karakalpakstan, Nukus district "Azamat Karakum" f/x 2021-2022)

Variants of experiments, rate of consumption of fungicides	Average damage (in points) after how many days:			
	until processing	15	30	45
Previkur SL 722,s.e.c. 1,5 kg/ga	4,3	1,0	2,5	4,6
Falkon 46% em.k. 0,4 l/ga	3,7	1,8	3,1	4,8
Alto Super 33% em.k. 0,3 l/ga	3,5	2,3	3,6	5,1
Control, unprocessed	3,3	9,5	12,0	13,0

EKF₀₅=

1,3

0,9

1,1

As a general conclusion, although all three preparations have high efficiency, it is noted that the Previkur fungicide, which showed a higher effect, has an advantage.

As can be seen from Table 2, when the author used the drug Previkur (1.5 kg/ha) against powdery mildew of melon, the incidence of leaves decreased from 20.1% to 2.3-4.5-9.2 decreased.

Table 2

Effect of fungicides on the development of powdery mildew of melon,

(Production experience, Republic of Karakalpakstan, Kegeili district, "Aynazar Baba" f/x 2021-2022)

Variants of experiments, rate of consumption of fungicides	Average morbidity (points) after how many days:			
	until processing	15	30	45
Previkur SL 722, s.e.k. 1,5 kg/ga	20,1	2,3	4,5	9,2



Falkon 46% em.k. 0,4 l/ga	17,6	3,0	7,4	11,2
Alto Super 33% em.k.	15,2	4,0	8,2	12,3
Control, unprocessed	17,1	20,3	31,2	36,3
EKF ₀₅ =	1,1	2,4	2,1	

Falcon (0.4 l/ha) and Alto Super (0.3 l/ha) also caused significant disease reduction. Accordingly, all three fungicides showed biological efficiency.

CONCLUSION. 15 days after treatment, when we applied fungicides to reduce the damage of watermelon by powdery mildew disease, it showed a disease score of 1.8 in Falcon and 2.3 in Alto Super. In previkur, the morbidity score was 1.0 points. So, when treated with these fungicides, the incidence rate decreased. When calculating the effect of fungicides on the development of powdery mildew of melon, 15 days after treatment, it showed a disease score of 3.0 in Falcon and 4.0 in Alto Super. In Previkur, the morbidity score was 2.3 points. So, when treated with these fungicides, the incidence rate decreased. We can say that the best result is Previkur fungicide.

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