Web of Scholars: Multidimensional Research Journal (MRJ)
Volume: 01 Issue: 06 | 2022 ISNN: (2751-7543)
http://innosci.org

Monilious Disease of Quince and Measures to Control It

Z. A. Umarov.[1], A. A. Pulatov.[2], J. N. Berdiyev[3]
[1]Senior Researcher., PhD, [2]Doctoral Student, [3]Doctoral Student,
[1, 2, 3]Scientific Research Institute of Horticulture, Viticulture and Winemaking named after Academician M.Mirzaev, Tashkent, Uzbekistan

Abstract: *In this article about the moniliosis disease occurring in the Samarkand large-fruited Elita 750g/kg WDG (0.4 kg/ha) variety, the results of fungicide studies are highlighted. As a result of the study, fungicides used against quince moniliosis showed high biological effectiveness. In the leaves, branches and fruits of the quince Samarkand large-fruited 6.3% were infected with moniliosis, and in 2.1% the disease progressed. Biological efficiency was 91.2%.*

Keywords: *quince, disease, fungus, pathogen, fungicide, damage, disease development, biological efficiency.*

Introduction. Quince *(Cudonia oblonga Mill.)* is a colleague of fruits belonging to the tree family, wild species are found in Azerbaijan, Dagestan, Turkmenistan, Iran, in the Turkish language it is known as quince. Quince grows in the Caucasus, Central Asia, Crimea and southern Ukraine. Astrakhan is distributed in the region. Also, this fruit-bearing plant is widely distributed in Uzbekistan, 80% of the Fergana bezori corresponds to the valley. The height of the quince tree is 5-6 m, the branches are in the form of a pyramid, sometimes it grows in branches. The leaf is simple, green, the edge is entire. Flowers solitary, white or pale pink, bloom in April. After 3-4 years after transplantation, the seedling will bear fruit, 30-40 years of life. Mature trees give an average of 60-70 kilograms. Fruits in September - Harvest in October, weighing 150-500 grams, depending on the variety. Quince fruits are lemon-colored or orange, covered with hairs, molt when touched, fragrant. Freshly picked fruit, less consumption will be made. Quince is entomophilous (insect pollinated) by a plant. Quince fruits contain 74.7-83.5% water, 8.5-15.2% sugars, 0.2-1.5% acids and additives as well as stone cells. The fruits are rough, and the bones soften after long-term storage. Quince jam, compote, marmalade, candied fruit, kiyam, as well as cooked, eaten (mainly pilaf). Quince is mainly propagated by cuttings, seedlings are planted according to the scheme of 6x6 or 5x5 meters. Most varieties of pears are pears. Welding how to connect a pear to it will be small. Quince grows well on warm and moisture-loving, irrigated fertile soils, as well as on slightly saline soils. Soils are watered 3-8 times, depending on conditions [14].

Humidity is also important for the quince plant, but it can tolerate drought well in cases of lack of moisture. Studies have shown that it reduces evaporation and prevents leaves from curling from excessive soil moisture. However, with normal soil moisture, it gives a high-quality and plentiful harvest. During the flowering period, the fruits of quince are lemon or orange in color, the fruit is covered with hairs, and on ripened fruits, the hairs are easily removed. It ripens late, very resistant to transportation and storage.[15].

Currently, one of the most common diseases of quince is moniliosis. The disease is caused by the ascomycete (discomycete) fungus Monilinia cydoniae, synonyms of which are Monilinia linhartiana, Sclerotinia cydoniae and Peziza linhartiana and its anamorph Monilia cydoniae. The pathogen is in a highly specialized form and only affects bees. M. Sydoniae, the causative agent of Behe's moniliosis, and the cystic stage of this fungus were identified for the first time in the

territory of the former USSR. This served as a source of primary infection with the disease in the spring. Studies have shown that the fungus usually does not hibernate in buds, and M. Cydonia has a low specialization [2].

Fungi that cause moniliosis in quince develop in the conidial, sclerocial, and, less commonly, saccular stages. At the sac stage, the fruiting body of apothecia is shaped like a cap and stem, and unicellular, colorless spores form sacs. On average, 4-5 apothecia are formed in one sclerotia at a relative air humidity of 95-100% and a temperature of 15 0C (12). Quince is severely damaged by another species of ascomycete that causes moniliosis in quince - Monilinia linhartiana, anamorphic form - Monilia Sydoniae. This pathogen is one of the two most dangerous buffalo diseases in Europe [3, 11, 13].

Disease of beech moniliosis In early spring, when beech flowers are already written and flower buds begin to swell, apothecia begin to grow from sclerotia. Since apothecia are small (cap width 3-5 mm) and located inside the chamber, it is more difficult to find them. Ascospores developed on apothecia are the primary source of the disease and are carried by rain and wind to and infect quince leaves and flowers. As a result of diseases, quince flowers, fruit buds and leaves around them dry up, do not crumble for a long time, and completely rot from air humidity. Conidia develop on infected organs and can cause secondary and subsequent lesions on leaves, flowers, and young tree branches [4, 5, 6, 7, 9, 10].

It is very important to carry out agrotechnical, chemical and comprehensive measures to combat moniliasis in cattle in a timely manner. Also, in the variant treated against the disease with the fungicide Falcon 0.04%, studies have shown that the incidence was 21.7%, the development of the disease was 11.2%, and the biological effectiveness against the disease was 80.1%. [1].

In our research, we studied the damage caused by monilosis to the vegetative and generative organs of the quince tree in quince orchards, as well as the optimal consumption rates and terms of application of various fungicides against monilosis.

Research methods. Research on the study of moniliosis of quince orchards was carried out on the basis of generally accepted methods of mycology and agricultural phytopathology. Species composition, bioecology of pathogenic fungi N. M. Pidoplichko, M. K. Khokhryakov; infection with diseases and development of diseases K. M. Stepanov, A. E. Chumakov, I. I. Minkevich (1974); the use of fungicides against diseases, the determination of biological and economic efficiency was carried out using the methodological manuals of Sh.T. Khodzhaev (2004).

Research results. Our research was carried out in the quince orchards of the Research Institute of Horticulture, Viticulture and Winemaking. academician M. Mirzaev and them. Tests of highly biologically effective fungicides against moniliosis in quince orchards were carried out.

In the course of research in the control variant, quince Samarkand large-fruited quince variety was affected by the disease moniliosis on average up to 41.3%, and the development of the disease up to 24.1% (table).

TABLE BIOLOGICAL EFFICIENCY OF THE FUNGICIDE ELITE 750 G/KG WDG IN CASE OF MONILIOSIS OF THE VARIETY QUINCE SAMARKAND LARGE-FRUITED

Field trial, academician M. Mirzaev Research Institute of Horticulture, Viticulture and Winemaking, 2022.

№	Option	Application rate of working solution, kg/ha	*Leaf, branch, fruit*		
			damage, %	disease development, %	biological efficiency, %
1.	*CONTROL (NO CHEMICAL TREATMENT)*	-	41,3	24,1	-
2.	*Xorus w.d.g. 750 g/kg (template)*	0,2	4,7	1,7	93,1
3.	*Elite 750 g/kg WDG*	0,4	6,3	2,1	91,2

According to the results of experimental tests, the fungicide Elite 750 g/kg WDG applied at a consumption rate of 0.4 kg/ha, showed high efficiency against mare moniliosis. The incidence of diseases (leaves, fruits and stems) was 6.3%, and the development of diseases was observed up to 2.1%. Biological efficiency was observed up to 91.2%.

Xorus w.d.g. 750 g/kg when applying (0.2 kg/ha) of the fungicide, damage of up to 4.7% (leaves, fruits and stems) was observed. Biological efficiency reached 93.1%.

Conclusions. Thus, the fungicide Elita 750 g/kg WDG (0.4 kg/ha) showed high biological effectiveness against moniliosis of the quince tree. Damage was observed up to 4.7%, and the development of the disease up to 2.1%. Biological efficiency was 91.2%. It is also recommended to apply chemical protection measures 4 times during the growing season: during the budding of trees, during flowering, after flowering, 3 times after 14 days of chemical treatment, 1000 l/ha of the working solution per 1 ha in the morning or evening cool time. .

References

1. Zokirov Sh.Sh., Erkaev Sh.N. Moniliosis is a dangerous disease in the gardens of Bukhara. / Problems and prospects for increasing the efficiency of the biological method of plant protection against harmful organisms. Republican scientific and practical conference.- Tashkent, 2015.133-134-pp.
2. Kazantseva A.E. Monilial burn of quince of the Azerbaijan SSR // Bul. All-Russian Research Institute for the Protection of Rust, 1986, №. 64 .- 61-64 pp.
3. Kursanov L.I., Naumov N.A., Krasilnikov N.A., Gorlenko M.V. Key to lower plants Vol.3. Mushrooms. Under the general editorship of prof. L.I. Kursanova. State. Publishing house "Soviet science" M.: 1954.
4. Mirzaev M., Nabiyev Yu. Moniliosis disease. Agriculture of Uzbekistan, 2007, №. 6-10 pp.
5. Peresypkin V.F. Agricultural phytopathology. M.: Agropromizdat, 1989,.389-403 pp.
6. Pidoplichko N.M. Fungi are parasites of cultivated plants. Determinant. Volume1. Mushrooms are perfect. Kyiv, "Naukova Dumka", 1977 a, 296 p.
7. Pidoplichko N.M. Fungi are parasites of cultivated plants. Determinant. Volume 2. Imperfect mushrooms. Kyiv, "Naukova Dumka", 1977, 300 p.
8. Khodzhaev Sh.T. Guidelines for testing insecticides, acaricides, biologically active substances and fungicides. - Tashkent, 2004. -83–90 pp.
9. Khositashvili E.E. Proceedings of the session of the Transcaucasian Council for the Coordination of Research in Plant Protection. Baku, 1968 [cit. after Khokhryakova and Kazantseva, 1966].
10. Khokhryakova T.M., Kazantsyva A.E. Monilial quince burn // Mycology and Phytopathology. - T., 1968. No. 6. -491-495 pp.

11. Yachevsky A. A. Determinant of mushrooms. Volume 2. Imperfect mushrooms. 2nd ed. Pgr., 1917, 803 p.
12. Dobrasrakova T.L. Agricultural phytopathology.-L.: Kolos, 1966.-328 p.13. Ellis M.B., Ellis J.P. Microfungi on land plants. An identification handbook. Published by Croom Helm. London & Sidney, 1985, 450 p.
13. Pomology of Uzbekistan. "Uzbekistan". 1983.
14. Ostonakulov T.E., Narziyeva S.Kh. Fundamentals of fruit growing. Tashkent: -2010.