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Efficiency Of Fungicides Against Mealy Dew In Pear Gardens

Umarov Zafar

Doctor of Philosophy of Agricultural Sciences (PhD), Scientific Research Institute of HV and V named after Academician M.Mirzaev, Uzbekistan

Obidzhanov Dilshod

Doctor of Philosophy of Agricultural Sciences (PhD), Scientific Research Institute of HV and V named after Academician M.Mirzaev, Uzbekistan

Pulatov Aziz

Doctoral student, Scientific Research Institute of HV and V named after Academician M.Mirzaev, Tashkent, Uzbekistan

ABSTRACT

In our study, the fungicide Koritus WG (0,4 kg / ha) was tested against powdery mildew found in pear orchards. The study showed a high biological effectiveness of the applied fungicide against dew disease from pear flour. Damage to leaves was from 7,1%, fruits - from 6,2%. The development of the disease ranges from 5,7 to 6,4% in leaves, and in fruits from 3,9%. The biological effectiveness ranged from 89,8% to 90,3%.

KEYWORDS

Pear, Disease, Fungi, Pathogen, Fungicide, Damage, Disease Progression, Biological Effectiveness.

INTRODUCTION

Powdery mildew of plants has long been known on crops of agricultural plants, so K. Linney back in 1753 gave a characteristic of this disease on a number of plants.

Powdery mildew on apple trees was first noted in 1830 in France by the naturalist J. Duby, who characterized the pathogen and named the mushroom - Erysiphe mali. In 1888, English scientists J. Ellis and R. Everhart gave a complete description of the causative agent of

apple powdery mildew and introduced the name *Sphaerotheca leucotrica*. The still existing specific name of this pathogen was introduced in 1900 by E.S. Salmon, who, based on the marsupial stage, identified it as *Podosphaera leucotrica* (Ellis et Everhart) Salmon (Groshev, 2002).

On the territory of the modern CIS countries, V.K. Varlik noted for the first time apple powdery mildew at the end of the 19th century.

According to A.A. Yachevsky (1910), at the beginning of the 20th century, the disease was noted in the conditions of the Caucasian Black Sea, spread to the territory of Samarkand, Siberia, Volyn province, as well as Sochi, Bessarabia and Feodosia. Subsequently, the distribution area of powdery mildew is very extensive and covers the Transcaucasus, Central Asia, the North Caucasus, Crimea, Ukraine, where it causes significant damage to plantings in gardens. (Tafradzhiyski, 1965; Bondarenko, 1984).

As mentioned above, apple and pear powdery mildew is widespread in Central Asia and occurs in all regions of Uzbekistan. The disease affects the buds, leaves and fruits, as well as young branches and shoots. A pinkish to gray powdery bloom appears on the leaves. Further, the plaque captures the entire surface of the leaf, forming whitish spots, the affected leaves and shoots turn brown and dry out. The affected branches lag behind in growth, are covered with a whitish-pink bloom - mycelium, on which the sexual stage of the fungus is formed in the middle of summer - cleistothecia with bags and ascospores inside.

The mycelium infects the buds in the spring and summer, shortly after the leaves unfold. In spring, infected shoots develop 5-8 days later than healthy ones. The affected organs are covered with a plaque - mycelium with conidion carriers (asexual stage of development), fertility decreases. The pathogen can infect young apple fruits and remain alive until harvest. Infected fruits reduce the rate of ripening, become covered with bloom, whitish spots, and may crumble (Khasanov, 2010).

PLACE AND METHOD OF RESEARCH

The fungicide Koritus WG was tested in the pear orchard of the Scientific Research Institute of H&V named after academician M. Mirzaev, Tashkent region, Tashkent region. The gardens were laid out 7 years ago, pear variety "Forest Beauty".

The treatments were carried out using a motorized knapsack sprayer with a calculated flow rate of the working fluid of 1000 l/ha. The experiments were laid in the morning hours, from 8 to 10 am, when the air temperature did not exceed 26 °C and the wind speed was 1 m/s.

The establishment of the experiments, subsequent accounting and calculations of biological efficiency were carried out in accordance with the "Methodological instructions" (2004), approved by the State Chemical Commission of the Republic of Uzbekistan.

TEST RESULTS

The fungicide Koritus WG was tested at a rate of 0.4 kg / ha in pear powdery mildew.

Experimental data show that in the control variant, the susceptibility of pear powdery mildew is -75.0% on the leaves and -56.0% on the fruits, with the development of the disease it is 54.2% and 40.2%.

After 3 times application of this fungicide against powdery mildew Koritus WG at a consumption rate of 0.4 kg/ha showed a good result, where the biological efficiency was 89.8% on pear leaves and 90.3% on fruits, with the development of the disease it was 5.7% and 3.9%.

The reference variant, where spraying with the fungicide Horus 750 v.d.g was applied at a consumption rate of 0.4 kg/ha, where the

biological efficiency on the leaves was 90.6%, and on the fruits - 91.3% (see Table 1).

Table 1.

Biological effectiveness of fungicide KoritusWG. Against pear powdery mildew. Tashkent region, Tashkent district, Scientific Research Institute of SViV named after academician M. Mirzaev, 2019

№	Options	Consumption rate of the drug, kg / ha	Leaves			products		
			Defeatibility,	Development	Biological	Defeatibility, %	Development	Biological
1.	Control (without processing)	-	75,0	54,2	-	56,4	40,2	-
2.	Chorus 750 v.d.g. (reference)	0,4	6,8	5,1	90,6	5,9	3,5	91,3
3.	Koritus WG	0,4	7,1	5,7	89,8	6,2	3,9	90,3

CONCLUSION

To prevent the spread of disease-causing pathogens of powdery mildew disease, the use of fungicide Koritus WG (0.4% kg / ha) is required. Chemical control measures should be carried out 4 times during the growing season: bud swelling, flowering, after flowering, and also 14 days after the third treatment, normally 1000 liters of working fluid per hectare in the morning or evening.

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