



DETERMINING OF THE MEASURE DISEASE CONTROL ORNAMENTAL CROPS DURING THE GROWING SEASON IN THE CONDITIONS TASHKENT REGION

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ABSTRACT

Determined degree of damage the disease *Phragmidium disciflorum* (Tode.) James, *Botrytis cinerea* Pers. and *Sphaerotheca pannosa* Lev. var. *rosae*. At the decorative flower (Rosa L.) in the Tashkent region. Application of 25% wettable powder bayletona against powdery mildew and spotted in a dose of from 0.5 to 1.0 kg / ha Infected plants reduces from 43.7% to 16.5% for powdery mildew, from 29.8 to 9.5%, - in the case of spotted, while the biological efficacy of the drug ranged from 62.2% to 75.6% and 60.2 to 75.6%, respectively. One of the conclusions was relatively low efficacy of fungicides against rust roses. The maximum effect was at fundazol - 66.4 -72.1% folikura - 63,2-66,0% and Topsin_M - 57.0 -59.1%.

KEYWORDS: Rosa L., fungi types, systematic of disease. *Phragmidium disciflorum* (Tode.) James, *Botrytis cinerea* Pers. and *Sphaerotheca pannosa* Lev. var. *rosae* disease, species of fungi, degree of damage.

INTRODUCTION

Currently, there are different ways to plant propagation-budding, cuttings, and modern biotechnological methods. However, among them is the multiplication of stem cuttings. According A. K. Kovalenko (1975), until the middle of the XIX century. rose propagated by rooting cuttings, layering and division of a bush. After 1850 rose everywhere began to multiply by budding. However, since the beginning of the XX century. due to its greater cheapness and ease of cuttings again become a practice of horticulture. Supporters of the own-rooted culture of roses believe that with the appropriate selection of the range they are more stable when over wintering in the soil than the graft, and moreover, are a good material for the distillation of flowers in greenhouses in the winter, because they do not have a dormant period, characteristic of grafted plants. In irrigated conditions, non-grafted plant hybrid tea roses are more durable and productive than graft (Berezkina *et al.*, 1986.). Properties of plants to recover from the individual organs and parts noticed a man since ancient times and used for artificial propagation of useful plants. Meaning of micro propagation is that it enables accurate reproduction of a parent plant. Cuttings - a quick and easy method of reproduction, it requires no special tricks required for vaccination. When cuttings are no problems of incompatibility of the scion with the stock or poor fusion of grafting. Plants are more homogeneous, because to a lesser extent seen volatility characteristic of grafted plants under the influence of different-quality stocks (Ermakov, 1981).The effectiveness of many of vegetative propagation of fruit and ornamental plants has increased dramatically due to the development of green technology propagation through the application of artificial fog formation, synthetic growth regulators, cultivation facilities film-coated (Ermakov *et al.*, 1981).

Despite the fact that the problem rhizogenesis actively developed (Prokhorov, 1972, Turetskaya, 1975, Ivanov *et al.*, 1982) of particular relevance are the experimental work on the development and refinement of the technology of propagation with respect to the biological characteristics of individual species or varieties of plants in certain soil - climatic conditions.

Roses grow for many years in one place; accumulate pathogens persisting from year to year. In living plants and dead remains of roses found about 270 species of mushrooms, 6 species of bacteria, 9 kinds of viruses, 19 species of nematodes (Ruzaeva I.V., 2007 Gorlenko, Panko, 1967; Gorlenko, Panko, Podopnaya, 1984). Outbreaks of diseases in addition to the visible damage is expressed directly affected leaves, buds, shoots amazing that inhibits the development of the whole plant. Diseases affecting the roses in one season may be harmful in the coming years. Struck pathogens planting material is a source of the spread of disease and contamination of large areas of Rosario. Information about the sustainability of the genus Rosa L. disease is reflected in the works of Kachurin L.I. (1958), Klimenko V.N. (1968), Mandre M. (1971), Rieksti D.A., (1971), Rumberga V.Y., (1971, 1974), Gorlenko S.W., (1975), Baumann G.K., (1979), Gorlenko *et al.* (1984), Denisova L.Ya. (1984), among the rich assortment there are different varieties of immunological properties (Kulibaba, 1968). Plant resistance to infection depends on their genetic properties (physiological and biochemical properties) of the corresponding responses to the infection, as well as the conditions in which they develop (temperature, humidity, mineral nutrition and others.) (Mandre, 1971; Rumberg, 1971; Sinadsky, 1973; Gorlenko, 1975; Anpilogova 1976; Kochetov, 1982; Dyakov, 1983; Gorlenko *et al.*, 1984; Misko, 1986; Berim 1987; Sinadsky 1987; Sinadsky,

Kozarzewski, Mukhina *et al.*, 1990). To prevent environmental pollution, violation of natural biocenoses and the acquisition of stable populations of some pests are most advisable to apply the integrated system protection, allowing hinder the development of harmful pathogens to a safe level. The most important chemical method, which is constantly being improved in enhancing the effectiveness of medications and methods of their use, and to reduce their toxicity (Shestiperova, Vasiliev, 1978; Misko, 1981; Koev, Buxar, 1984). The aim of this work is to determine the measures against diseases of ornamental crops during the growing season in a Tashkent region.

MATERIALS & METHODS

A crucial role in the introduction of new plant culture plays a selection of certain varieties (Vanin, 1933). This raises the need for their comprehensive study. Farming growing new plants often requires addressing a number of specific issues. Identification of varieties of roses, the most resistant to diseases and pests, held against the backdrop of preventive and chemical measures to combat them. The observations were made in the period of maximum development of the disease by the method of Yu Kulibaba (1968), Yu Kulibaba, MA Primakov (1974), SA Simonyan (1973). The degree of damage was determined in plants under natural conditions without artificial infection. Observations were made on plants of different ages in the period of maximum development of diseases of the visual method on 4-point scale. For each class determined the degree of development of the disease (in percent).

We used the following scale intensity lesion in points:

- 0- diseased missing;
- 1 single spot, hit up to 5% of the plant;
- 2 to 25% hit the plant surface;
- 3- affected up to 50%, clearly visible fruiting fungus;
- 4- affected more than 50% of the plants leaves osyshayutsya.

Degree (intensity) of the disease is calculated by the formula:

$$P = \frac{\sum(a \cdot b) \cdot 100}{NK}$$

where P is the development of the disease in%

a- number of the affected plants,

b- point defeat,

N- total number of accounting plant

K- highest score taking into account the scale of intensity lesions, *i.e.* 4.

Mathematical processing of digital research results carried out using conventional statistical methods (G.N. Zaitsev, 1984 and B. Borovikov, 2001) with the use of specialized computer software package EXCEL and Maple 9.5.

The results obtained are as follows:

	2013	2014	2015	average
<i>Phragmidium disciflorum (Tode.) James</i>	18,9	20,8	21	20,2
<i>Sphaerotheca pannosa Lev. var. rosae.</i>	20,8	23,4	17,9	20,7
<i>Botrytis cinerea Pers</i>	30,1	29,4	27	28,8

RESULTS & DISCUSSION

The climatic conditions of the city of Tashkent on the background of the common signs of a continental climate in temperate latitudes, as already noted, are characterized by significant variability from year to year. This refers to the amount of rainfall, the duration and timing of the drought during the growing season. Vary the duration of the growing season, the duration of a certain temperature, the amount of active temperature and the speed of its accumulation. Especially contrasting temperature conditions of spring and autumn periods. All this contributes to the development of numerous types of pathogenic fungi, bacteria and viruses.

Disease roses: Powdery mildew. It affects all above-ground parts of plants, in which there is a white powdery coating. Infected plants are treated with sulfur (Tiovit Jet, Cumulus) or copper-containing drugs (oksihom, hamsters, Bordeaux liquid), or systemic fungicides (topaz, and soon).

On the upper side of the leaf blade appear yellow-brown spots of indeterminate shape, with the bottom side - slightly conspicuous silvery-white film. Sometimes the spots are reddish. The leaves are corrugated, turn yellow and fall off. It affects leaves, stems, buds. Infected shoots are cut and burned. Control measures are the same as black spot.

Blackspot: It affects the leaves in the second growing season. Varieties fully resistant to the disease, no. On the upper side of leaves appear rounded dark brown or black spots with a diameter of 5-15 mm. Leaves turn yellow and fall off, bare bushes. Affected leaves are collected and burned. The plants are sprayed 3-4 times at intervals of not more than 7-10 days, alternating the preparations. Use copper-containing, ferruginous drugs fundazol, Bayleton, Ridomil Gold, Mancozeb, Bravo, Topaz, Vectra.

Rust: On the underside of the leaves appear rusty spots - pustules on the upper side of the visible yellowish and reddish spots. In the skeletal branches formed ulcers. Affected branches are cut and burned. Bushes sprayed with copper-containing preparaty, Bayletonom, Bravo, Falcon. In severe cases the bushes are destroyed.

Botrytis cinerea Pers: The disease develops under cover in the winter, with frequent changes in temperature. On the shoots appear brown spots, and then produced fluffy gray mycelium. In the summer of affected buds and flowers, which appear brown spots, then they grow and are covered by gray mold. Regularly remove the affected part of the plant. Plants sprayed fundazol, Benlatom, Teldorom. In severe cases shed at the root solution fundazol or Maxim.

In the process of doing research work in the region is the most common and most dangerous pathogen fungi species of flower plants to determine the level of disease initiation of patient given special attention. We have obtained the results shown in Figure 1.

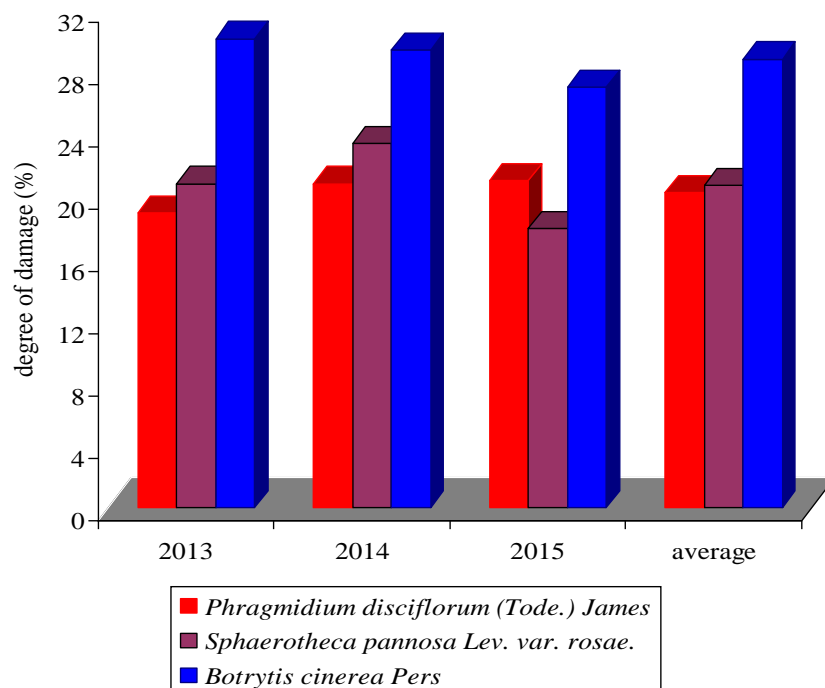


FIGURE 1. Determining degree of damage the disease *Botrytis cinerea* Pers., *Phragmidium disciflorum* (Tode.) James and *Sphaerotheca pannosa* Lev. var. rosae. occurring in the decorative flower (Rosa L.)

Determining of the measure Disease Control ornamental crops during the growing season

The most effective in suppressing the development of diseases characterized by the use of chemical methods of crop protection and crop. Chemical protection of plants based on the use of various organic and inorganic compounds (pesticides) are toxic to pests. Chemical remedies are more versatile, they can be used against most pests, diseases and weeds in agricultural cultures and different lands, as well as handle their warehouses, greenhouses, silos and other facilities.

Application of fungicides against plant disease known since ancient times. Numerous details of the means of struggle and historical summary given in the book. The oldest is considered sulfur fungicide. Dusting or sulfur treatment to date is widely used in agriculture. Development of modern pesticides in the past decade has led to more effective management of plant protection service.

Modern means of plant protection is different fast response and high efficiency when they need immediate destruction will multiply in large numbers of pests. Chemical crop protection provides for a system of measures aimed at the destruction of pathogens, prevention of contamination during the growing season. Proper use can reliably protect plants and help to increase the yield.

Effectiveness of chemical treatments is largely dependent on the timely and proper treatment selection fungicides. When choosing a product, the timing and frequency of treatments must take into account the biological characteristics of the pathogen of great importance is to determine the optimal concentration of the solution in

which the drug is detrimental effect on pathogens and do not harm plants.

As mentioned above, for ornamental crops is often no data on the use of modern fungicides to combat fungal diseases that formed the basis for the study of the impact of these chemicals on the eradication of diseases, rules of their application.

As noted in the works S. A. Misirova, the main and most common diseases floral - ornamental plants are withering, rot, necrosis - spot, fungal attacks - and the formation of mildew pustules - rust. In this connection, in our study were involved in such well-established in the agricultural products which have a wide range of actions suppress powdery mildews fungi, rust, various blights as Bayleton, 25% SP, Topsin-M, with 70% n., Folikur 25% s.em. Thus, the spectrum of action Bayletona includes suppression of development, powdery mildews, rust fungi, and various blights, analagichnym own range Topsin-M and Folikur. Complete data on physical, chemical and toxicological properties, methods of application and dosages can be found in the literature (Beglyarov *et al.*, 1983).

During the study the spread of disease was found that powdery mildew is common on roses, as in this culture often marked rust spotting, in particular blackspot, and therefore, these diseases on roses were chosen as model to identify optimal consumption norms of fungicides. What should be noted that in the case of specific diseases varied standard, on the basis of the available application parameters (Pesticides Handbook, 1992).

Thus, separately applied to selected drugs suppressing the development of powdery mildew (Table 1), rust (Table 2) and the spot (Table 3).

TABLE 1. The biological efficacy of fungicides in the fight against by powdery mildew roses (Tashkent region Kibray district "Shomil" and "Adolat" private floriculture farms, 2013-2015 years)

Option	Preparation consumption rate, kg / ha	Progression of the disease before treatment,%	Progression of the disease after treatment,%	Efficacy of the preparation, %
Control with no processing	-	31,8	43,7	-
Bayleton	0,5	31,0	18,8	62,2
Bayleton	0,7	32,7	15,7	73,1
Bayleton	1,0	32,3	14,5	75,6
Folikur	0,5	17,6	6,5	61,0
Folikur	1,0	17,0	6,3	74,8
Folikur	1,5	16,3	5,8	68,0
Topsin-M	1,0	6,6	2,7	63,2
Topsin-M	1,2	7,0	2,0	66,0
Fundazol (standard)	2,0	14,0	6,7	72,1

TABLE 2. The biological efficacy of fungicides in the fight against rust roses (Tashkent region Kibray district "Shomil" and "Adolat" private floriculture farms , 2013-2015 years)

Option	Preparation consumption rate, kg / ha	Progression of the disease before treatment,%	Progression of the disease after treatment,%	Efficacy of the preparation, %
-	-	18,2	27,5	-
Fundazol	1,0	15,5	8,2	66,4
Fundazol	2,0	14,0	6,7	72,1
Folikur	1,0	6,6	2,7	63,2
Folikur	1,2	7,0	2,0	66,0
Topsin-M	0,5	16,6	7,5	57,0
Topsin-M	1,0	17,0	7,6	59,1

If rust pitch, as a reference was chosen Bayleton 25% wp (1.0 kg / ha), other drugs tested (Table 2).

Third, one of the most important manifestations of the disease-a variety of necrosis (spot), including ramulyarioz, kladosporioz ~ geterosporioz, fommoz, septoria spot and other diseases that are characterized as elective or optional saprotrophs parasites (Popkova, 1989).

It was found that the effective action of the chosen fungicides is very close to the values of their exposure against powdery mildew (Table 1). This situation can be explained by the presence of at anamorphs powdery mildews fungi, which is representative of imperfect fungi.

TABLE 3. The biological efficacy of fungicides in the fight against black spot of roses (Tashkent region Kibray district "Shomil" and "Adolat" private floriculture farms, 2013-2015 years)

Option	Preparation consumption rate, kg / ha	Progression of the disease before treatment,%	Progression of the disease after treatment,%	Efficacy of the preparation, %
Control with no processing	-	19,6	29,8	-
Bayleton	0,5	21,2	11,8	60,2
Bayleton	0,7	20,1	10,7	72,1
Bayleton	1,0	21,3	9,5	75,6
Folikur	0,5	17,5	6,3	60,0
Folikur	1,0	17,0	6,3	74,6
Folikur	1,5	16,4	5,8	68,0
Topsin-M	1,0	6,7	2,6	63,3
Topsin-M	1,2	7,2	2,0	66,1
Fundazol (standard)	2,0	14,0	6,7	72,1

CONCLUSION

A chemical in the fight against diseases ornamental crops is the most effective methods of struggle. Identify measures to combat diseases of ornamental crops during the growing season in a Tashkent region. Use 25% wetttable powder bayletona against powdery mildew and

spotted in a dose of from 0.5 to 1.0 kg / ha infected plants reduces from 43.7% to 16.5% for powdery mildew, from 29.8 to 9.5%, - in the case of spotted, while the biological efficacy of the drug ranged from 62.2% to 75.6% and 60.2 to 75.6%, respectively. One of the conclusions was relatively low efficacy of fungicides against rust roses.

The maximum effect was at fundazol - 66.4 -72.1% folikura - 63, 2-66, 0% and Topsin M - 57.0 -59.1%.

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