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Research Article

THE DEPENDENCE OF THE AMOUNT OF ORGANIC MATTER ON THE DEVELOPMENT OF THE ROOTS OF GRAPE VARIETIES

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ABSTRACT

The analysis of the conducted experiments showed that when 40 tons of organic fertilizers were used in grape varieties, the best development of the root system was 302 cm in the Toyfi rozovy variety, 201 cm in the Kishmish Batir variety, and 295 cm in the Rkatsiteli variety when 40 tons of organic fertilizers were applied.

KEYWORDS

Root, vine bush, rootstock, bud, variety, leaf, fertilizer, organic, seedling, soil, climate, vine.

INTRODUCTION

Today, the total area of vineyards around the world has stabilized at the level of 9.5-10 million hectares, and grape production has grown steadily, reaching 60-70 million hectares in recent years. tons. Of the total amount of grapes produced in the world, 80-90% are used for processing wine, juice and other products, up to 10% of grapes are consumed fresh, and 5-6% are used for drying [1; p. 29]. The main part of the gross harvest of grapes grown in the world corresponds to the share of the following countries: China 13161 thousand tons,

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Italy 7170 thousand tons, USA 6679 thousand tons, France 5916 thousand tons, Spain 5387 thousand tons, Turkey 4200 thousand tons, India 2922 thousand tons, Chile 2000 thousand tons, Argentina 1965 thousand tons, Iran 1866 thousand tons, Australia has 1,824,000 tons and Romania has an average grape yield of 103.1 t/ha. . Currently, in the grape-growing countries of the world, great importance is attached to the creation of new varieties, the cultivation of vine seedlings with the ability to adapt new varieties to different climatic conditions, and the development of the most optimal agrotechnical measures in order to increase the yield of grapes [2; p. 138].

In the Republic of Uzbekistan, in recent years, extensive measures have been taken to create new varieties of grapes with high yield, resistant to widespread dangerous diseases and pests, and to develop agrotechnologies [3; pp. 53–55]. Nevertheless, improving the agrotechnical measures used in viticulture based on the soil and climate conditions of each region will further increase the production productivity of the viticulture sector. In the 30th goal of the new development strategy of the Republic of Uzbekistan for 2022-2026, "to increase the income of farmers and farmers by intensive development of agriculture on a scientific basis by at least 2 times, to bring the annual growth of agriculture to at least 5%" and to specialize districts in the cultivation of specific types of products, horticulture 46 , specialization of 48 districts for viticulture, 51 districts for vegetable-polishing, and 40 districts for potato cultivation. It is an important task to ensure planting of 25 thousand hectares of orchards, 50 thousand hectares of vineyards and 49 thousand hectares of vineyards in these districts. In this regard, it is an urgent task of both theoretical and practical importance to choose methods of growing promising grape seedlings, to expand scientific research on determining the best nutritional standards for vine cuttings.

METHODS

The experiments were developed by Kh.Ch.Boriyev, N.Sh.Enileev and others "Methodology of calculations and phenological observations in conducting experiments with fruit and berry-bearing plants", (2014), M.A. Lazarevskiy "Metody botanicheskogo opisania i agrobiologicheskogo izucheniya sortov vinograda" (1946), N.N. Prostoserdov's "Izuchenie vinograda dlya opredeleniya ego ispolzovaniya" (1963), V.F. Moiseychenko's "Metodika uchetov i nableudeniy v opytax s plodovymi i yagodnymi kulturami" (1967) and carried out according to styles. Statistical analysis of research results was calculated in Excel 2010 and Statistica 7.0 for Windows computer programs with a confidence interval of 0.95% according to the method shown by B.A. Dospekhov.

In the experiment, the grapes of Khorak, kishmishbop and winebop varieties were used as research objects. Lignified vine cuttings were planted in the experimental area in a 70x20 cm scheme. In each option, 100 units were planted in four returns.

The scheme of conducting the experiment is as follows:

1. transplanting cuttings without fertilizing - control;

2. apply 2 kg of organic fertilizer per meter of the row where cuttings are planted.

3. applying 3 kg of organic fertilizer per meter of the row where cuttings are planted.

4. applying 4 kg of organic fertilizer per meter of the row where cuttings are planted.

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5. apply 5 kg of organic fertilizer to each meter of the row where cuttings are planted.

RESULTS

Research was conducted in 2021-2023 at Gulistan State University "Agricultural Product Processing Technologies" department and "Akobir Azamatullah Sabina Fayz" farm, established in 2017, located in Mirzaabad district of Syrdarya region.

The location of the vineyard where the main field experiments were conducted included 410,221,478 m of geographic parameters. The distance of the field from the city of Gulistan is 5 km.

One of the main factors in the cultivation of high-quality seedlings of grapes is agrotechnical measures, which require the correct application of organic fertilizers and moderate fertilizing.

When the indicator of the carried out experiments was put in the norm of organic fertilizers, this agrotechnical event had a positive effect on the development of the roots of the grapes of Kho'raki, kishmishbop and winebop varieties.

According to the results of the study, in the fourth option, when 4 kg of organic fertilizer per m2 was given, the best results were obtained for the development of the grape fodder Toyfi Rozovy variety, the Kishmish Batir variety and the Rkatsiteli variety from the wine-growing varieties.

When studying the effect of organic substances on the development of the roots of grape varieties, the following indicators were obtained.

When treated without organic fertilizers, the average length of the roots was 100 cm in the control option of Husaynie Belyy. When 20 tons of organic fertilizer was applied to each, the average length of the roots was 23 cm more than the control option, and 46 cm than the control option when the amount of organic fertilizer was 30 tons, 40 per hectare it was found that the root length was 128 cm higher than the control variant when it was tons.

When the Rizamat variety of grape was grown in normal soil conditions without fertilizers (control), the root length was 76 cm, when 20 tons of organic fertilizers were applied per hectare, the root length was 52 cm compared to the control option, and when we added an additional 10 tons of organic fertilizers, the root length was 55 cm compared to the control option. cm, when the amount of organic fertilizer was increased to 40 tons, the root length was 110 cm compared to the control option.

The average length of the root was observed to be 106 cm when the type of grape seed was planted without fertilizer (control), compared to the control option, the amount of organic fertilizer applied per hectare was 28 cm when 20 tons of organic fertilizer was applied, 48 cm when 30 tons of organic fertilizer was applied, and 40 tons of control when applied it was determined to be 196 cm higher than the variant.

The dependence of the amount of organic matter on the development of the roots of grape varieties 2021-2023.

Varieties	Average length of roots without	When 20 tons of organic fertilizers are	When 30 tons of organic fertilizers are	When 40 tons of organic fertilizer is added to each

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	fertilizer (control), cm	added to each average length of roots, cm	added to each average length of roots, cm	plant, the average length of the roots, cm
Varieties of grapes				
Husaynie Belyy	100	123	146	218
Rizamat	76	128	131	186
Toyfi rozoviy	106	134	154	302
Husaynie kelin barmak	93	121	145	257
Kishmishbop varieties of grapes				
Kishmish bely	60	85	124	143
Kishmish cherny	60	87	117	187
Kishmish sogdiana	73	92	123	199
Kishmish zarafshan	69	74	102	177
Kishimish Botir	80	96	128	201
Wine varieties				
Bayan shirey	77	98	121	236
Risling	66	87	114	245
Rkasiteli	90	121	142	295
Saperavi	85	117	139	208

When studying the effect of organic fertilizers on the development of the root of Husainiye kylin finger of grape, the following indicators were achieved. The root length of the vine treated without organic fertilizer was 93 cm, when 20 tons of organic fertilizer was added to the soil, the root length was 28 cm compared to the control option, when 30 tons of organic fertilizer was added, the root length was 52 cm,

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and when 40 tons of organic fertilizer was added, the root length was 164 cm. returned to be cm.

When studying the effect of organic fertilizers on the development of the root system of kishmishbop varieties of grapes, the following indicators were obtained. In the Kishmish bely variety of grapes, it was 60 cm, in the Kishmish cherny variety, the root length was 27 cm when 20 tons of organic fertilizers were applied, 57 cm when 30 tons of organic fertilizers were applied, and 127 cm when 40 tons of organic fertilizers were applied, compared to the control option. was determined. When the Kishmish sagdiana grape variety was grown in an environment without fertilizers, the root length was 73 cm, compared to the control variant, when 20 tons of organic matter was applied, the root length was 19 cm, when 30 tons were applied, the root length was 150 cm, and when 40 tons of organic fertilizer was applied, the root length was 126. In the Kishmish Zarafshon vineyard, the corns are 69 cm long without processing, 20 tons of organic fertilizers are applied per square meter, the corns are 5 cm long, and 30 tons of organic fertilizers are applied. The length of the corn is 108 cm, compared to the control, and the amount of organic matter is 30 tons. In the Kishmish Botir variety of grapes, the root length was 80 cm when grown in an environment without fertilizers, when 20 tons of organic fertilizer was applied per hectare, the root length was 16 cm compared to the control option, when the amount of organic fertilizer was applied at 30 tons, it was 48 cm, when 40 tons of organic fertilizer was applied, the root length was 80 cm the length was found to be 121 cm higher than the control variant.

When studying the dependence of root development of grape varieties on organic fertilizers, the root length of Bayan Shirey variety without fertilizer (control) was 77 cm, compared to the control option, the root length was 11 cm when 20 tons of organic fertilizer was applied, 44 cm when 30 tons of organic fertilizer was applied, and When 40 tons of organic fertilizer was applied, it was found that the root length was 159 cm compared to the control option. When the dependence of the root development of the grape variety Riling on organic fertilizers was studied (control), the root length in the environment without fertilizers was 66 cm. Compared to the control option, the root length was 21 cm when 20 tons of organic fertilizer was applied to each field, 48 cm when 30 tons of organic fertilizer was applied, and 159 cm when 40 tons of organic fertilizer was applied. In the Rkatsitali grape variety, the root length was 90 cm when the soil composition was treated without organic fertilizer (control), compared to the control option, when 20 tons of organic fertilizer was applied per hectare, the root length was 31 cm, when 30 tons of organic fertilizer was applied, the root length was 52 cm and 40 it was observed that the root length was 205 cm higher than the control vraiant when tons of organic fertilizers were applied. The root length of grape Saperavi without fertilizer (control) was 85 cm, compared to the control option, when 20 tons of organic fertilizer was applied per hectare, the root length was 42 cm more, when 30 tons of organic fertilizer was applied, the root length was 54 cm more than the control option and per hectare area. When 40 tons of organic fertilizer was added, the root length was 123 cm higher than the control option.

CONCLUSION

1. The analysis of the conducted experiments showed that the best development of the root system was found to be 302 cm in the Toyfi rozovy variety when 40 tons of organic fertilizers were applied in the fodder varieties of grapes, and it was found to be between 186 and 257 cm in the rest of the varieties.

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2. When studying the effect of organic fertilizers on the root development of kishmishbop varieties of grapes, it was found that the highest indicator was 201 cm of root length when 40 tons were applied per hectare of Kishmish Batir variety. In the remaining varieties, it was observed to be between 143 cm and 199 cm.

3. The effect of organic substances on root development in wine grape varieties was as follows. The highest indicator was found to be 295 cm in the Rkatsiteli variety when 40 tons were applied. In the remaining varieties, it was observed to be from 208 cm to 236 cm.

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