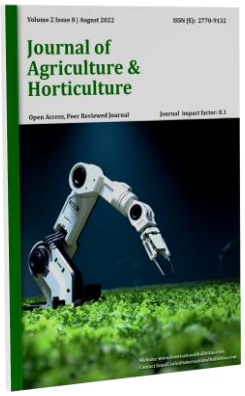

DEGREE OF DISEASE AND PEST DAMAGE OF WALNUT VARIETIES

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Abstract.
In this article, the information about marssoninosis and bacteriosis, which are the most common diseases of walnuts in the world, is recorded, and the distribution and development of diseases in walnut varieties is determined on 100 leaves and 100 leaf bands of each tree and calculated on the basis of scales. Based on these data, we determined the disease index (Ki) in each of the varieties. In this case, the spread of the disease (T) was determined according to the generally accepted formula (1).
Key words: Walnut, Varieties, Leaf, Marssoninosis, Brown Spot, Nut Fruit Eater, Tree.

INTRODUCTION

Walnut (Juglans regia L.) is an agricultural crop grown in temperate and subtropical climate zones worldwide. According to FAO data, the contribution of 3758.6 thousand tons of walnut production in the world is in Asia – 58.1%, in America – 25.8% and in Europe – 14.7%, the main producers are China (1 785.9 thousand t .), USA (607.8 thousand tons), Iran (405.3 thousand tons), Turkey (190.0 thousand tons), Mexico (141.8 thousand tons), Ukraine (107.9 thousand tons .) and Chile (73.5 thousand t.) are the countries". The total area of walnut cultivation in Uzbekistan in 2022 is 13,200 hectares, the gross harvest is 55,497 tons, and the yield is 9.4 t/ha.

During the visit of the President of the Republic of Uzbekistan Shavkat Mirziyoev to the Samarkand region on October 5, 2016, he was instructed to use the lands of the Urgut district, in particular, to plant walnuts, almonds, and vines on the hilly lands, which was later noted above (2017

The adoption of the decision of the President of the Republic of Uzbekistan No. PQ-3025 "On the creation of the association of walnut producers and exporters and organization of its activities" shows that the attention of the state has increased in this regard.

RESEARCH METHOD:

Experiment In 2020-2021, scientific research works were carried out within the framework of the project "Enrichment of plant genetic resources in Uzbekistan and India and increasing the scientific potential of researchers" on the territory of the Bostonliq Mountain Research Station of the Research Institute of Horticulture, Viticulture and Winemaking named after Academician Makhmud Mirzaev.

The Bostonliq mountain scientific-experimental station is located in the north of Tashkent region, at an altitude of 1050-1300 m above sea level.

Chumakov et al. (1974) in determining the degree of pest damage was carried out on the basis of methodological manuals such as "Modern methods and means of integrated protection of plants from pests" (Khojaev Sh.T., 2015).

disease in walnut varieties, the Ideal (st) variety showed 72.7%, and the lowest prevalence compared to the standard variety - Kazakhstansky (23.9%), Hybridnyy (32.0%) and Uzbeksky. skoroplodnyy (32.6 %) varieties, and high prevalence was found in Rodina (73.6 %) and Panfilovets (82.9 %) varieties. In other varieties, Istiklal (34.9%), Bostanlyksky (35.6%), Yubileynyy (44.3%), Grozdevidnyy (45.7%), Konsaisky (49.1%) ranged from 34.9 to 72.0%), Hissarsky (53.1 %), Mirnyy (54.5 %), Tonkoskorlupnyy (56.5 %), Gvardeysky (65.0 %) and Pioner (72.0 %) varieties.

the standard variety is Kazakhstansky (4.7%), Istiqlol (4.8%) and Hybridny (5 ,4 %) varieties, and the most development was found in Pioner (31.0 %) and Panfilovets (31.5 %) varieties. Other compared walnuts are Uzbeksky skoroplodnyy (6.8%), Grozdevidnyy (8.2%), Bostanlyksky (8.3%), Yubileynyy (10.4%), Hissarsky (11.4%), Konsaisky (13.5 %), Tonkoskorlupnyy (13.6%), Mirnyy (13.9%), Gvardeysky (21.4%) and Rodina (22.1%) varieties compared to Ideal (st) variety 6.8...22.1 showed the development of brown spotting (marssoninosis) disease in the range of %.

1 - Table

The degree of damage of Greek nut varieties by diseases and pests (2020-2022 yy.)

Навлар	Касаллик ва зараркунандалар билан зарарланиш даражаси						
	Қўнғир доғланиш (марссониноз)						Ёнғоқ мева хўри, %
	Касалликнинг		Касалликка чидамлилик индекси ($К_и$)				
	тарқалиши (Т)	ривожланиши (Р)	чидамли (0,1-2,0)	нисбатан чидамли (2,1-10,0)	ўртача чидамсиз (10,1-20,0)	чидамсиз (20,1-30,0)	
Идеал (st)	72,7	29,7				21,63	11,5
Бостанлыкский	35,6	8,3		2,97			11,1
Тонкоскорлупный	56,5	13,6		7,71			11,2
Юбилейный	44,3	10,4		4,59			10,8
Гвардейский	65,0	21,4			13,92		11,8
Гибридный	32,0	5,4	1,73				10,9
Гиссарский	53,1	11,4		6,04			11,3
Гроздевидный	45,7	8,2		3,74			11,7
Истиқлол	34,9	4,8	1,69				10,5
Казахстанский	23,9	4,7	1,12				11,7
Консайский	49,1	13,5		6,62			12,2
Мирный	54,5	13,9		7,58			11,6
Панфиловец	82,9	31,5				26,09	11,7
Пионер	72,0	31,0				22,34	10,5
Родина	73,6	22,1			16,30		10,7
Узбекский скороплодный	32,6	6,8		2,23			9,9

Ideal (st) is less infected in the range of 0.6-1.0% compared to the variety, on the contrary Mirnyy (11.6%), Grozdevidnyy (11.7%), Kazakhstansky (11.7%), Panfilovets (11.7%) and Gvardeysky 0.1-0.3% more damage was found in (11.8%) varieties. (See Table 1)

So, it was found that 3 cultivars are resistant to marssoninosis, 2 cultivars are moderately resistant, 8 cultivars are relatively resistant and 3 cultivars are resistant. Therefore, when creating new varieties of walnuts, disease-resistant Kazakh, Istiklal and Hibridnyy varieties can be used as primary material.

CONCLUSION:

It was found that 3 cultivars are resistant, 2 cultivars are moderately resistant, 8 cultivars are relatively resistant and 3 cultivars are resistant to brown spot (marssoninosis) disease in walnut. Among the varieties of walnuts, it was found that Kazakhstani Istiklol and Hibridnyi varieties are resistant to marssoninosis. Therefore, these disease-resistant varieties can be used as a starting material for the creation of new varieties of walnut.

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