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# Efficacy of Seed-Dressing preparations against Fungal Diseases in Chickpea Crop

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***Abstract***

*The article reveals the results of the study on testing of seed-dressing preparations Celest top 312 FS, sus.c. and Maxim XL 035 FS, 3,5% sus.c. and their biological efficacy. Recommendations for planting of chickpea seeds in the pea planting fields of farms and agroclusters with the application of seed- treatment preparations in the most optimal consumption rates have been given.*

***Keywords:*** *Chickpea, Yulduz, Zumrad, Umid, Uzbekiston-32, Lazzat, variety, Fusarium oxysporum, F.solani, Ascochyta rabiei, Leveillula taurica f.ciceris.*

Peas have long been cultivated in arid regions of Central Asia and Asia Minor. No wild species found. It ranks third among leguminous crops in terms of cultivated area. The cultivated area is about 10 million hectares, including 8 million hectares are cultivated in India. Peas are grown in Algeria, Morocco, Turkey, Iran, and Mexico. In conducting morphological studies, the use of solidified agar nutrient medium together with liquid nutrient medium also gives good results (Pidoplichko, 1953; B.K. Pandey, U.S. Singh, H.S. Chaube, 1987).

When studying the histological changes that occur as a result of the effect of the ascochyta pathogen on chickpeas, on the 4th day of plant growth, the conidia of this fungus penetrated into the stem tissues and formed a set of subepidermal hyphae. On the 6th day, it was found that the tissues turned yellow and the hyphae increased by the enzymes contained in the fungi breaking down the tissues of the host plant, forming mature pycnidia in the necrotic tissues. If the plant is affected with disease during pod formation, pods will not be formed, if it is damaged later, seeds will not be formed, when the disease is severe, grain yield will be lost by 60%, protein will be reduced by 2-3%, seed germination will reduce 50-80 % and the weight of 1000 seeds will be reduced by 50% (Lukashevich, 1960; Nene, 1984).

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It has been observed that pathogenic conidia begin to develop 12 hours after the inoculation of spores of fungi that cause ascochyta in pea crops (Hohl, Pfautsch, Barz, 1990).

When other leguminous crops were artificially infected with the spores of Ascochyta (*Ascochyta rabiei*) fungus, 9 types of plants showed signs of the disease (V.N. Bondarseva-Monteverde, N.I. Vasilevskiy, 1940).

To test seed-dressing preparations against chickpea diseases in the field of "Oltinobod" farm of A.Ikromov village in Khatirchi district, of Navoi region, the seeds of chickpea were treated with preparations Maksim XL 035 FS, 3,5% sus.c. (25 g/l+10 g/l) (*Fludioxonil+Mefenoxam*) in consumption rate of 0,8-1,0 l/t and Selest top 312 FS, sus.c (262,5 g/l+25 g/l) (*Thiamethoxam+Fludioxonil+ Difenoconazole*) in consumption rate of 0,8-1,0 l/t and then planted. When the seed-dressing preparation Maksim XL 035 FS, 3,5% sus.c. tested against fusarium wilt disease in peas in consumption rates of 0,8-1,0 l/t, biological efficiency was 86,1-89,2%, while the application of Selest top 312 FS, sus.c. in consumption rate of 0,8-1,0 l/t showed 85,1-88,1% biological efficiency. In the standard option, this figure was 87,6% (Table 1).

When the preparation Maksim XL 035 FS, 3,5% sus.c. was tested in consumption rate of 0,8-1,0 l/t against ascochyta disease of chickpea in the field of "Oltinobod" farm, the biological efficiency was 81,0-85,6%, while with Selest top 312 FS, sus.c. in consumption rate of 0,8-1,0 biological efficiency was 78,4-86,3%.

**Table 1**. The effect of seed-dressing preparations on fusarium wilt disease of chickpea (Field of "Oltinobod" farm, A.Ikromov village, Khatirchi district, Navoi region, 2022)

| Options | Consumption rate of preparations, l/t | Total number of plants per 1 $m^2$ area, pcs | Infestation, % | Disease development, % | Biological efficacy, % |
|---|---|---|---|---|---|
| Control (without treatment) | - | 28,0 | 32,4 | 19,4 | - |
| Vitavaks 200 FF 34% w.sus. c. (standard) | 2,5 | 33,2 | 5,4 | 2,4 | 87,6 |
| Maksim XL 035 FS, 3,5% sus.c. | 0,8 | 32,4 | 6,3 | 2,7 | 86,1 |
| | 1,0 | 34,0 | 4,3 | 2,1 | 89,2 |
| Selest top 312 FS, sus.c. | 0,8 | 29,8 | 6,8 | 2,9 | 85,1 |
| | 1,0 | 32,1 | 4,5 | 2,3 | 88,1 |

**Table 2.** The effect of seed-dressing preparations on ascochyta disease of chickpea ((Field of "Oltinobod" farm, A.Ikromov village, Khatirchi district, Navoi region, 2022)

| Options | Consumption rate of preparations, l/t | Total number of plants per 1 $m^2$ area, pcs | Infestation, % | Disease development, % | Biological efficacy, % |
|---|---|---|---|---|---|
| Control (without treatment) | - | 28,9 | 26,5 | 15,3 | - |
| Vitavaks 200 FF 34% w.sus. c. (standard) | 2,5 | 31,3 | 6,3 | 2,5 | 83,6 |
| Maksim XL 035 FS, 3,5% sus.c. | 0,8 | 31,6 | 6,8 | 2,9 | 81,0 |
| | 1,0 | 33,4 | 5,1 | 2,2 | 85,6 |
| Selest top 312 FS, sus.c. | 0,8 | 30,3 | 6,9 | 3,3 | 78,4 |
| | 1,0 | 32,1 | 4,4 | 2,1 | 86,3 |

Summarizing the results of the use of seed dressing preparations tested for pea diseases, it has been found in the observations that the application of Maksim XL 035 FS, 3,5% sus.c. in consumption rate of 0,8-1,0 l/t and Selest top 312 FS, sus.c. in consumption rate of 0,8-1,0 l/t against common and harmful diseases of pea in fields and agroclusters covered with chickpea plants gave an effective result.

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