**Study the Efficiency of Survey of Certain Fungicides for the Yellow Yellow/Pseudopeziza jonesii Nannf/Platystephanus medicaginis Medicago sativa**

**Abstract**

In the period 2014-2016, a study was carried out on the effectiveness of some Pseudopeziza jonesii Nannf fungicides in Bulgarian Alaska Plants and Ruse and EFC Pleven in Bulgarian Alfalfa. The purpose of this study is to determine the efficacy of some fungicides in reducing disease progression. Technique effectiveness of fungicides, degree of attack, reported: Impact 25 CK / Flutriaphol / 25 ml / dka, Falcon 460 EC / Tebuconazole, Spiroxamine, Triadimenol / -30 ml / dka; Poliecur 250 W / tebuconazole / -40 ml / dka, Bayfidan 250 EC / triadimenol / -50 ml / dka.

**Keywords:** Alfalfa; Medicago sativa; Pseudopeziza jonesii nannf; Tebuconazole; Spiroxamine; Triadimenol; Flutriaphol

**Introduction**

Medicago sativa is a feed culture with unique characteristics: high yield and tolerance to water stress ... / Letida Quagliotto 2009 / Many algae pathogens (Pseudopeziza medicaginis) are known to damage the leaves and stems, leading to defoliation, loss Of yield and quality. Dam on L Smith, Scott [1] Chapman, / Foliar pathogens reduce the crude protein content of infected leaves by 22% compared to healthy plants. [2] and reduce the quality of the feed. Data on the use of fungicides in alfalfa cultivation are contradictory. According to some authors, the use of fungicides to protect plants from pathogens is a common practice [3]. According to Gossen, Rimmer [4], Iwang et al. [5], Frate (2014), intensive fungicide administration in lucerne crops has been established in recent years. In Bulgaria, such studies are limited, which requires the study of the effects of some fungicides on the restriction of the development of pathogens. Other authors believe that Fungicides are not widely used to protect alfalfa from leaf-borne diseases due to concerns about residues in animal feeds. Broscious et al. [6], Leath K [7] studies on losses caused by leaf pathogens in lucerne show that fungicides can provide effective control of the disease and significantly increase hay yield [6,7] and hay quality [8]. Although fungicides effectively control disease and increase yield and quality, they should not be considered as the sole control method. Comparing the yield of the highest yield and the most advantageous treatment shows that the optimal use of fungicides will only prevent about 68% of the total losses due to leaf diseases, therefore the use of fungicides must be integrated with other methods such as resistance, crop rotation, timely harvesting in order for producers to realize the maximum economic return on their investments Broscious et al. [7]. One of the fungal diseases of alfalfa is yellow leaf spots. They are known in alfalfa in Europe, America and others Penchukova VS, Meirmanov G [9]. Under favorable conditions all leaves are smeared and the crop looks yellow, the leaf mass falls, and the yields decrease. Alfalfa burdens lead to changes in the chemical composition and significantly reduce the nutritional value of the feed. Infested plants are difficult to overwinter. The mushroom is retained in the attacked leaves. Losses greatly increase in years of wet and warm spring, especially in seed crops [10]. This study aims to establish the efficacy of some fungicides to reduce the development of yellow leaf spot disease.

**Material and Methods**

The researches were carried out in the AMS “Obraztsov Chiflik” Rousse and EFC Pleven. Three Bulgarian alfalfa cultivars were used. The experience is based on a block method in four iterations in the experimental field of the RASC “Obraztsov chiflik”. The size of the experimental parcels is 10 m. The fungicide test is according to the Rümme scheme. The investigated chemical preparations and plant treatment doses are listed in (Table 1). Two treatments with fungicides have been carried out. In phase button and beginning of blossoming of alfalfa. The first count is 14 days after the beginning of the flowering period. The second 14 days after the first treatment for the biological efficacy of the fungicide. Infected plants are used as a source of infection. The degree of attack was reported by the McK’s formula by the frequency and intensity of the attack. Treating crops during vegetation when attacking over 10% of the leaf area. Testing of fungicides is carried out in Polish experience of an artificial infection background. Effectiveness of fungicides is determined by the method of Stepanov and Chumalov [11].

**Results and Discussion**

The disease manifests on all the aerial parts of the plants. Leaves and stems form oblong, yellow to orange or dark brown brown spots (Figure 1). The applied fungicides, with different
active substances (tebuconazole, spiroxamine, triadimenol, prothioconazole), reduce the attack on leaf and plant stems compared to untreated variants. In the variants with the active substances tested, no significant differences were found with respect to the activity of the tested products (Table 1). There are no significant differences between the products during the treatment period. Similarly, the results obtained are obtained by monitoring the vitality and coverage of the plants. The dynamics of grass cover formation depends on the ontogenetic development of the crop and does not depend on the factors studied. The attack is close to the observed varieties. Higher effectiveness was found in the follicular preparation. The analysis of the experimental results shows that the Pseudopeziza jonesii Nannf infestation index ranges from 15.70 to 27.90% over the period of the survey (Table 2) [12-15].

Table 1: Variants of the experience.

<table>
<thead>
<tr>
<th>№</th>
<th>Trade Name</th>
<th>Active Substance</th>
<th>Dose ml/Dka</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>Control untreated</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Impact</td>
<td>Flutriafol 250 g/l</td>
<td>25</td>
<td>Vegetative</td>
</tr>
<tr>
<td>3</td>
<td>Follicur 250 EB</td>
<td>Tebuconazole 250 g/l</td>
<td>40</td>
<td>Vegetative</td>
</tr>
<tr>
<td>4</td>
<td>Byfidan</td>
<td>Triadimenol 250 g/l</td>
<td>50</td>
<td>Vegetative</td>
</tr>
<tr>
<td>5</td>
<td>Falcon</td>
<td>Tebuconazole 167 g/l, Spiroxamine 250 g/l, Triadimenol 45 g/l</td>
<td>30</td>
<td>Vegetative</td>
</tr>
</tbody>
</table>

Table 2: Variants of the experience.

<table>
<thead>
<tr>
<th>№</th>
<th>Trade Name</th>
<th>Index of Attack %</th>
<th>Efficacy</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Prista 3</td>
<td>Prista 4</td>
</tr>
<tr>
<td>1</td>
<td>Control untreated</td>
<td>27.04</td>
<td>15.00</td>
</tr>
<tr>
<td>2</td>
<td>Impact</td>
<td>19.70</td>
<td>35.00</td>
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<tr>
<td>3</td>
<td>Follicur 250 EB</td>
<td>15.70</td>
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<td>4</td>
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<td>21.35</td>
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<td>5</td>
<td>Falcon</td>
<td>22.10</td>
<td>20.00</td>
</tr>
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Conclusion
The test substances applied vegetatively in lucerne do not induce phytotoxicity of the culture and limit the development of the pathogen. Although fungicides control disease and increase yield and quality, they should not be considered as the only control method.

Conflict of Interest
None.

Acknowledgement
None.

References


