The Influence of Fertilization upon the Powdered Mildew (*Microsphaera Abbreviata*) Attack Degree in Durmast Seedlings

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Abstract. Concerning the management of durmast seedlings cultures in nurseries, the main methodology applied for enhancing their development and resistance against diseases, relies on the following issues: irrigation, high biological value seedlings, mechanization, disease fight specific chemicals, and, at last but not at least, an appropriate fertilization. The aim of this paper is to identify the most efficient fertilizing option, in order to form an important variable for increasing the resistance to the powdery mildew attack. The trial was carried on during experimental year 2009 in a durmast nursery from Transylvanian Plain. During vegetation period, the attack degree of *Microsphaera abbreviata* was recorded. A monofactorial design was put into practice, using 3 variants. Basic statistic and correlations were calculated using STATISTICA v. 7.0. The biggest attack degree of *Microsphaera abbreviata* on durmast seedlings was recorded in the variant where fertilization was performed with maximum mineral fertilizer dose, N_{80}P_{80}K_{80} (6.31%), respectively, followed by attack degrees recorded for other mineral fertilizer doses N_{60}P_{60}K_{60} (5.54%) and N_{40}P_{40} is classified on the 5th place. Our trial shows that N_{80}P_{80}K_{80} with poultry manure is the fertilization solution, which confers to durmast seedlings the biggest resistance against the attack degree of *Microsphaera abbreviata* mushroom.

Keywords: mushroom, nursery, mineral fertilizers, manure

Introduction. Ourdays the main managerial methodology used in durmast seedlings nurseries, in order to enhance their development and resistance against diseases, relies on the following issues: irrigation, high biological value seedlings, mechanization, disease fight specific chemicals, and, at last but not at least, an appropriate fertilization (Hajji et al., 2009; Jacobs et al., 2005. The fertilizers are mineral or organic substances obtained by synthesis, applied as solids, liquids or gaze on soil surface with the aim of improving its fertility (Mälkönen et al., 2000).

Aims. The aim of this paper was the identification of the most efficient mineral fertilizer, or combination of mineral with organic fertilizer, and of the most efficient doses, with the aim of recommending its use in durmast nurseries, in order to form an important variable for increasing the resistance to the powdery mildew attack.

Material and Method. The trial was carried on during 2009 in a durmast nursery from Transylvanian Plain. During vegetation period, the attack degree of *Microsphaera abbreviata* was recorded. A monofactorial design was put into practice, using 3 variants. Basic statistic and correlations were calculated using STATISTICA v. 7.0.

Results and Discussions. The biggest attack degree of *Microsphaera abbreviata* on durmast seedlings was recorded in 2009, in the variant where fertilization was performed with maximum mineral fertilizer dose, N_{80}P_{80}K_{80} (6.31%), respectively, followed by attack degrees recorded for other mineral fertilizer doses N_{60}P_{60}K_{60} (5.54%) and N_{40}P_{40} is classified on the 5th place. During experimental year 2009, the *Microsphaera abbreviata* mushroom attack degree
was smaller in fertilized variants (43.33%) compared to control (Fig. 1). The smallest attack degree was reported in variant where organo-mineral mineral\(\text{NH}_4\text{NO}_3 +\) manure with \(N_{60}\) was applied. The average attack degree was 33.59%.

![Graph showing variation of Microsphaera abbreviata attack degree](image)

Note: 1 – Control; 2 - N40P40K40; 3 - N60P60K60; 4 - N80P80K8; 5 - \(\text{NH}_4\text{NO}_3\) (33%)\(N_{60}\); 6 - \(\text{NH}_4\text{NO}_3\) (33%)\(N_{80}\); 7 - \(\text{NH}_4\text{NO}_3\) (33%)\(N_{100}\); 8 - Manure (G); 9 – G + N40P40K40; 10 – G + N60P60K60; 11 – G + N80P80K80; 12 – G + N60; 13 – G + N80; 14 – G + N100; 15 - F1; 16 - F2; 17 - F3

Fig. 1. The variation of the frequency of the \textit{Microsphaera abbreviata} attack degree, function of fertilization variant, 2009

The biggest positive difference in advantage of the experimental variants, was recorded between the powdery mildew attack degree in control and group where fertilization variant represented by poultry manure and mineral fertilizer \(N_{80}P_{80}K_{80}\) was administered, statistically significant (p < 0.01). Differences statistically not significant (p > 0.5%) were recorded between control and other experimental variants.

\textbf{Conclusion.} During experimental period we notice the positive influence of the mineral fertilization associated to organic fertilization on the resistance of the durmast seedlings against powdery mildew attack degree. \(N_{60}P_{80}K_{80}\) with poultry manure is the fertilization solution, which confer to durmast seedlings the biggest resistance against the attack degree of \textit{Microsphaera abbreviata} mushroom.

\textbf{REFERENCES}

