Caslavova et al., 2019 Journal of Animal & Plant Sciences (J.Anim.Plant Sci. ISSN 2071-7024)
Vol.42 (1): 7100-7106. https://doi.org/10.35759/JAnmPlSci.v42-1.2

# Effect of foliar selenium application on the infestation of the perennial ryegrass *Lolium perenne* L. and tall fescue *Festuca arundinacea* Schreb. by fungal pathogen *Fusarium culmorum* (W.G. Sm.) Sacc.

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**Keywords:** Ergosterol, Biotic stress, Selenate, Selenite

**Publication date 31/10/2019, http://www.m.elewa.org/JAPS**

## 1 SUMMARY

**Selenium is considered an essential element for the life of animals, including humans. Anyway, its necessity and function in the plant organism have not been fully explained yet. The aim of the work was to investigate an effect of foliar application of selenium on the infestation of the perennial ryegrass and tall fescue by fungal pathogen *Fusarium culmorum* based on a determination of ergosterol in plant biomass. Two major species of grass (perennial ryegrass and tall fescue) cultivated under defined climate chamber conditions were included in the experiment. Within 5 weeks from their germination, a solution of selenium in the form of selenite or selenate, corresponding to 4 mg/m$^2$ Se, was foliarily applied onto the plants. After 14 days of spraying, a solution containing conidia of *Fusarium culmorum* was applied to the plants. Subsequently, samples of green matter were taken at 14-day intervals, and the content of ergosterol and selenium were determined there. The content of ergosterol, which was selected as a marker of fungal pathogens, was found to be significantly higher ($P<0.05$) on the 28$^{th}$ day after the selenite and selenate application in both grass species. This increase was conclusive ($P<0.05$), when compared to the control group. No difference was observed between the selenium forms used. From our experiment, it is clear the plants of the perennial ryegrass and tall fescue were more easily attacked by fungal pathogen *Fusarium culmorum* after the application of selenium. Thus, it is possible to assume the application of selenium acts as stress a factor to plants.**