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## INFLUENCE OF CONTROLLED RELEASE FERTILIZERS ON *Lilium regale* SPECIES GROWTH AND FLOWERING

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### Abstract

Our research aims to establish the influence of Osmocote®Pro fertilizer on ornamental characteristics, photosynthetic pigments content, superoxide dismutase and peroxidase activities for *Lilium regale* species. The tests were organized in four variants, each with three replicates, each replicate consisting of 10 bulbs. The growth of plants in the four experimental variants was achieved without fertilization in case of the control variant (M) and under fertilization conditions with Osmocote®Pro for the rest of variants (V1 - 4g fertilizer/plant; V2 - 6g fertilizer/plant and V3 - 8g fertilizer/plant). The influence of fertilization on plant growth and development has been assessed by plant height, number of flowers, cups' diameter and length. The growth in height and capacity of plant flowering were stimulated by applying the fertilizer, regardless of the dosage used. The application of fertilization with Osmocote®Pro at *Lilium regale* species caused an increase in plant height, number of flowers per plant, cup diameter, the best results being highlighted for the variant at which we have applied the highest dose of fertilizer. Compared with the control, the increasing of the fertilizer concentration determined a further growth in terms of plant height, number of flowers, diameter and length of the cups. At the physiological level, in the fertilized variants we observed an increase in the total content of assimilating pigments, the content of chlorophyll *a*, *b*. The results pointed out that plants fertilization was positively correlated with the enzymatic activity, while a decrease of superoxide dismutase activity compared to the control was observed.

**Keywords:** fertilizer, *Lilium regale*, photosynthetic pigments, SOD

Received: September, 2018; Revised final: April, 2019; Accepted: May, 2019; Published in final edited form: May, 2019

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