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THE INFLUENCE OF SOME SUBSTANCES IN SEED GERMINATION AND THE DEVELOPMENT OF DOUGLAS SEEDLINGS (*PSEUDOTSUGA MENZIESII*)

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Abstract: In forestry, seed quality plays an important and decisive role for establishing highly productive and ecologically stable stands with an optimal structure and composition for specific stationary conditions. A quality seed, which includes the hereditary traits of the species and respectively the genotype (provenance, selection), must also possess a good germination capacity, so as to ensure the obtaining of a large percentage of seedlings. In this study, the possibilities of stimulating the germination of douglas seeds (*Pseudotsuga menziesii*), sourced from Baci Orchard, O.S. Cluj, using different chemicals were analyzed.

• Introduction

Pseudotsuga menziesii, commonly known as Douglas fir, is not a native tree species to Romania. However, it has been introduced and cultivated in various parts of the country. The importance of Douglas fir in Romania can be understood in the context of forestry, environmental conservation, and the timber industry.

• Material and method

The materials used in this experiment include: *Pseudotsuga menziensis* seeds, blotting paper, sterile petri dishes, seed germinator, distilled water, Atonik solution, potassium permanganate, copper sulphate. The seeds were soaked in four different solutions for 24 hours before initiating the germination process.



Fig. 1. Treatments applied to Douglas fir seeds

• Results and discussions

After the investigation, it was noticed that the best results were recorded in the V2 variant (Atonik), which had a significant influence on seed germination percentage, followed by the V3 variant (potassium permanganate). The lowest germination percentage was recorded in the V1 (water).

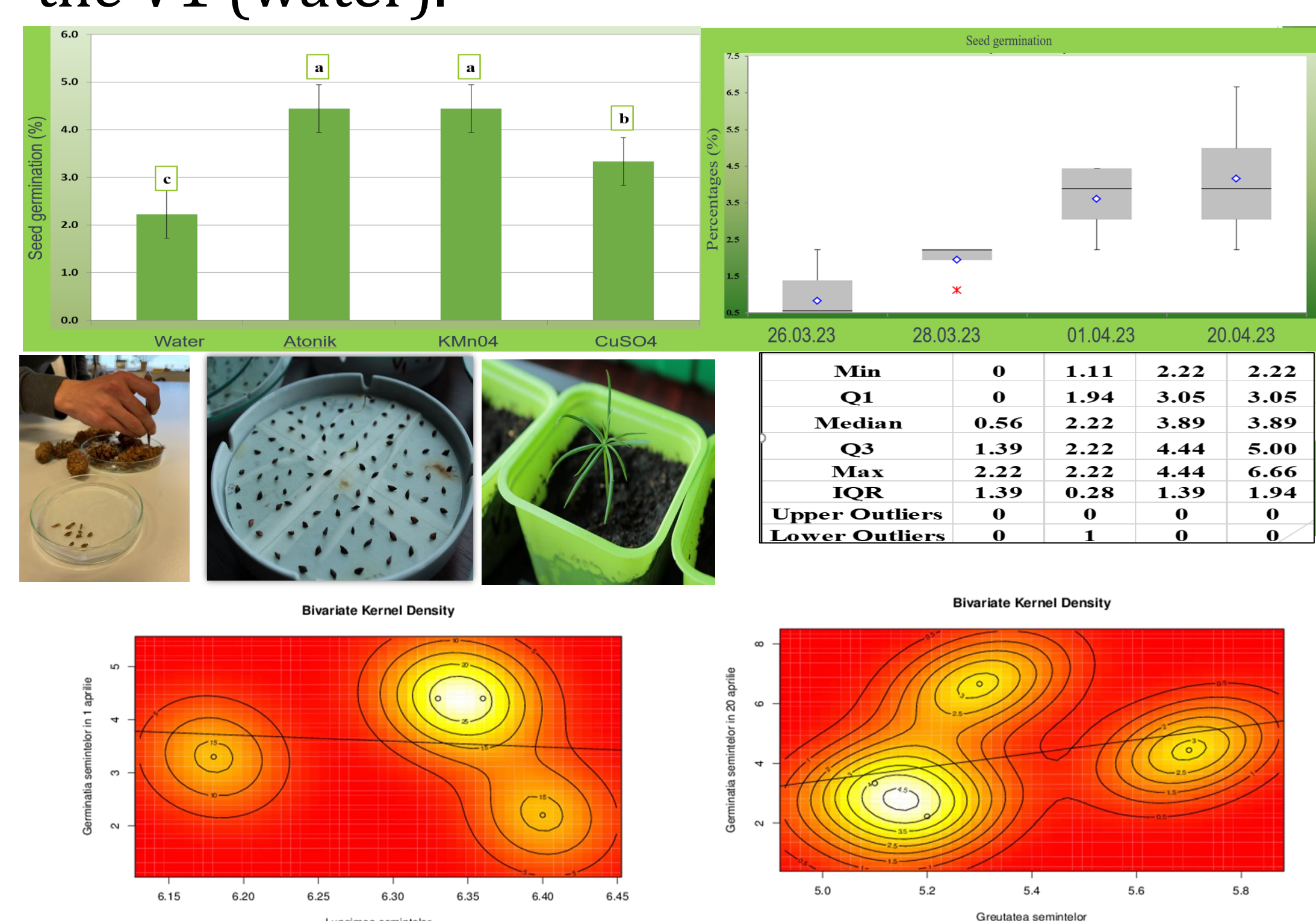


Fig. 2. Results synthesis for the germination capacity of Douglas fir seeds

The selection of chemicals with a significant influence on germination processes and their application will lead to an increase in the seedling establishment and emergence rates of the studied species.

• Conclusions

This strategic approach not only enhances the efficiency of seed propagation but also contributes to the overall success of regeneration efforts, benefiting forestry, conservation, and sustainable land management practices.