



Effects of Different Sterilization Rinses on Germination of Hemp, *Cannabis Sativa*, for Tissue Culture

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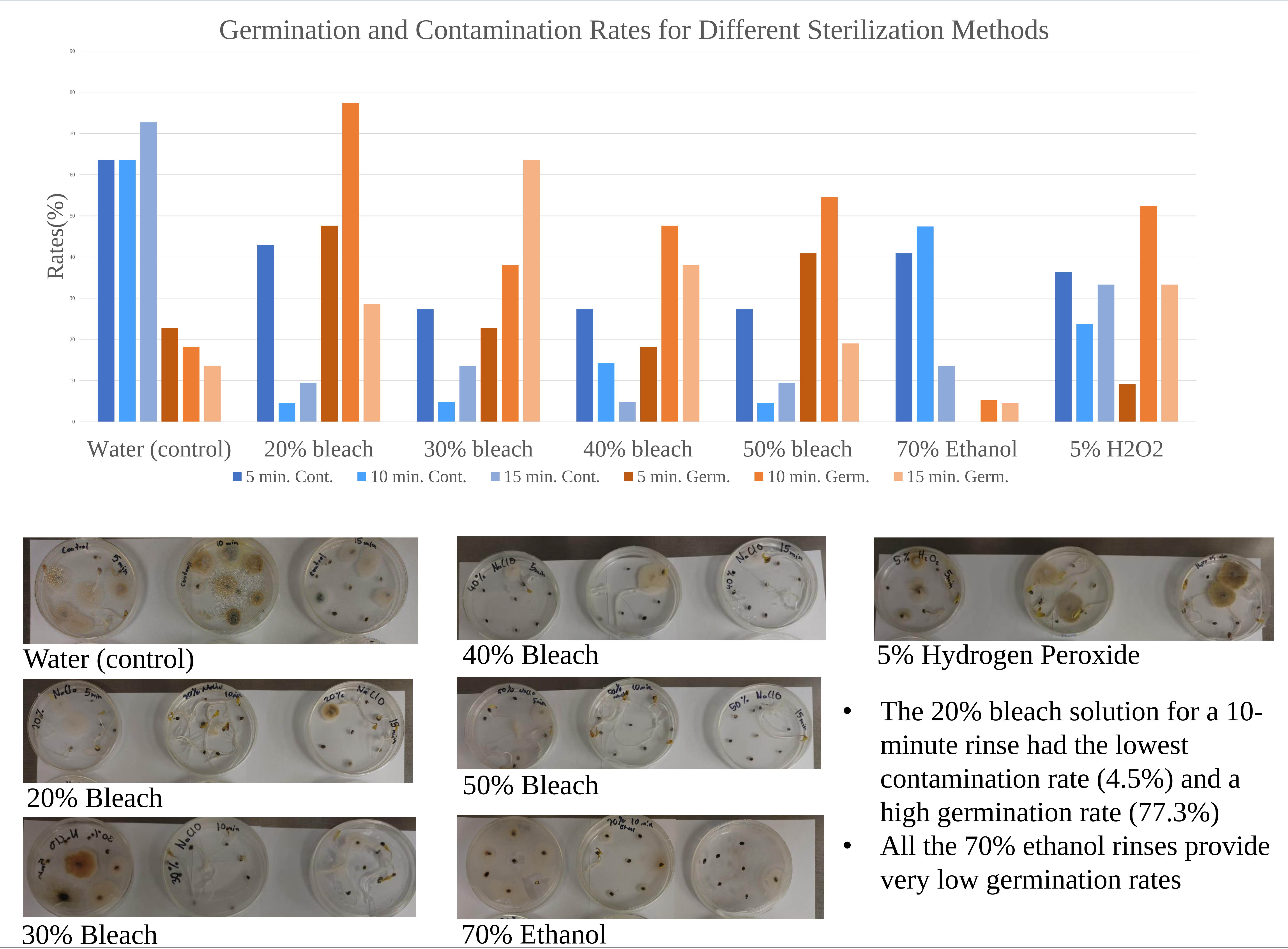
Introduction

Production of hemp, *Cannabis sativa*, is a growing industry as the plant can be used to produce oil and fiber. Tissue culture is a method of growing plants that involves using a small piece of the plant to regenerate a new plant with a sterile media in a controlled environment. With the hemp industry growing, tissue culture of this plant could provide growers with a more reliable, low-maintenance product. **The goal of this research was to study the impact of different chemical solutions on sterilization and germination of hemp seeds.**

Methods

- Sterilization solutions:
 - Water (control)
 - 20% bleach
 - 30% bleach
 - 40% bleach
 - 50% bleach
 - 70% ethanol
 - 5% H₂O₂
- Seeds were rinsed in the designated sterilization solution for 5, 10, or 15 minutes.
- Seeds were triple rinsed in double distilled, sterile water and plated onto Murashige and Skoog (MS) media
- Germinated in a growth chamber at 26 °C for one week
- Germination and contamination rates were calculated based on number of seeds affected

Results



Acknowledgments

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Conclusions

20% bleach for a 10-minute rinse provided the best results. Further research needs to be done to confirm that other varieties respond similarly. The hemp used in this research will be researched to determine if callus formation and regeneration can occur.