Effect of Eucalyptus Extract Combination with Calcium Chloride on Microflora of Grapevine during Storage.

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INTRODUCTION

Grape varieties with the abilities of high standard of safe keeping are characterized with low intensity of breathing, thick and firm pulp, conditioned by the particular features of the species.

The loss causing of pathogenic microbiological diseases during storage has a high economic impact. The research aim was to study effect of eucalyptus extract with combination calcium chloride on microflora of grapevine during storage.

MATERIALS AND METHODS

Two grapevine varieties were selected for study: “Alphonse Levallée" and "Italia". Two combination of eucalyptus extract and calcium chloride were selected for experiment: I.1 % $CaCl_2$ and 2% eucalyptus extract; II. 2% $CaCl_2$ and 1% eucalyptus extract; III. Control-untreatment grapevine.

Treatment and control both were stored storage refrigerator -POLAIR Standard (temperature-0- 10C, humidity- 85-90%).Clear pathogenic culture were extracted from infected grapevine during storage (60-120 day). It was revealed that Botrytis cinerea and Penicilium expansum were two major infected agent which causing micro Characterization and identification of fungi carried out using 40X-2500X professional infinity Trinocular Compoud Microscope (SKU:T690C).

RESULTS

As a result showed the loss caused from phytopatohenic fungi were different-Control for grapevine varieties "Italia" with Botrytis cinerea was-55.3% and Penicilium expansum-37,6%. For "Alphonso Levalée” by Botrytis cinerea-54,1% and Penicilium expansum-35,2%. Clear Pathogenic culture were extracted from infected grapevine during storage (60-120 day).

Figure 1. Grapevine varieties: A“ Italia”, B “Alphonse Levallee



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t was revealed that Botrytis cinerea and Penicilium expansum were two major infected agent which causing microbiological disease of grapevine varieties “Alphonso levalee" and "Italia". Characterization and identification of fungi carried out using 40X-2500X professional infinity Trinocular Compoud Microscope (SKU:T690C).

Figure 2. “Alphonse Levallee”



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Table 1. Effect of Combined solution on microbiology diseases

Grapevine varieties	Botrytis cinerea	Penicilium expansum
Italia		
Control	55,3%	37,6%
1% $CaCl_2$ and 2% eucalyptus extract	50,5%	41,3%
2% $CaCl_2$ and 1% eucalyptus extract	42,8%	32,4%
Alphonse Levallée		
Control	54,1%	35,2%
1% $CaCl_2$ and 2% eucalyptus extract	48,2%	32,8%
2% $CaCl_2$ and 1% eucalyptus extract	45,1%	30,4%

CONCLUSION

The best result for grapevine varieties "Italia" was showed 2% CaCl2 and 1% eucalyptus extract, in this case loss causing by Botrytis cinerea-42, 8%, and Penicilium expansum- 32,4%, but inhibition effect caused from Botrytis cinerea for "alphonso levalee" was-45,1% and Penicilium expansum-30, 4%. Thus, the combination of 2%CaCl2 and 1% eucalyptus extract had inhibition influence on developments of Botrytis cinerea and Penicilium expansum,especially on Botrytis cinerea.

LITERATURE

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