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Effect of eucalyptus extract combination with calcium chloride on microflora of grapevine during storage

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Background &Aims

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 & Methods:

Two grapevine varieties were selected for study: Alphonse Levallée and Italia. Two combinations of eucalyptus extract and calcium chloride were selected for experiment: I.1 % CaCl2 and 2% eucalyptus extract II. 2% CaCl2 and 1% eucalyptus extract III. Control-untreatment grapevine. Treatment and control both were stored storage refrigerator -POLAIR Standard (temperature-0-10C, humidity- 85-90%).

Findings:

Pathogenic clear cultures 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 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). 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%. 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%.

Conclusion

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

Recent Publications:

1. Effect of different covering materials used during the pre-harvest stage on the quality and storage life of ‘Sultana Seedless’ grapes Fatih Sen1 *, Metin Ke Food Science and Technology ISSN 0101-2061DDOI: http://dx.doi.org/10.1590/1678-457X.6484

2. Carbon dioxide-enriched atmospheres during cold storage limit losses from Botrytis but accelerate rachis browning of ‘Redglobe’ table grapes Carlos H. Crisosto *, David Garner, Gayle Crisosto Department of Pomology, Uniersity of California at Dais, Kearney Agricultural Center, 9240 South RierbendAenue, Parlier, CA 93648, USA Received 2 July 2001; accepted 21 January 2002

3. Potatenko A.I. ’’ Storage of table grapes depending on its varietal characteristics Wine-making and viticulture”, 2004, № 3, p. 38–34.

4. Degradation in grape quality during storage and transportation http://vinogradgid. ru/ udobrenievinogradnikov/uxudshenie kachestva vinogradapri xranenii transportirovke.html 21.04.2014. http://wineclass.citylady.ru/botrytis_cinerea.htm

Biography:

Tamar Shamatava has completed her PhD at St. Andrew the First Called Georgian University of the Patriarchate of Georgia from 2010-2015. She is the Senior Scientist at Georgian Technical University Biotechnology Center. She has published more than 17 papers in reputed journals. She has a great experience in agriculture and biotechnology field.

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