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

Tamar Shamatava, Maia Kukhaleishvili, Ekaterine Bulauri and **Tamar Chipashvili**
Georgian Technical University, Georgian

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 % $CaCl_2$ 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-0-10$_C$, 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%.

Conclusions: Thus, the combination of 2% $CaCl_2$ 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.

tamarasha_12@yahoo.com