

EFFECT OF STORAGE TEMPERATURES AND PERIODS ON POLLEN VIABILITY AND IN VITRO GERMINATION OF PISTACHIO CULTIVARS

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Abstract

This study was conducted on seven pistachio cultivars to examine the effect of storage conditions on pollen viability and in vitro pollen germination under different durations. Each pollen was stored in room temperature (24 °C±2), refrigerator (4°C) and freezer (-5°C) for 0, 1, 2, 3 and 4 weeks. Pollen viability was investigated by using staining methods including TTC, IKI and safranin solutions. The results showed that at all storage methods and periods, pollen viability and in vitro pollen germination were significantly the highest for Batouri and Ashouri cultivars and the lowest for Marawhi and Elemi cultivars.

The results showed that the highest pollen viability was attained by safranin when pollen stored under freezer condition. However, pollen viability by TTC was the lowest at room temperature storage. In addition, in vitro pollen germination and viability were decreased significantly as storage period increases. This study revealed no differences between in vitro germination percentages for refrigerated and frozen stored pollen up to 2 weeks. Meanwhile, in vitro germination of room stored pollen was gradually decreased when storage duration increased. At the end of storage period, pollen viability was reduced slightly under freezer conditions whereas the reduction in viability was the largest for refrigerated and room stored pollen with no differences between them. This experiment showed a significant cultivar x storage method x period interaction for pollen viability but not for in vitro pollen germination

Biography:

Abdallah Aldahadha has a PhD in Plant Ecophysiology from University of New England, Australia. He is working in Maru Agricultural Station which belongs to National Agricultural Research Center (NARC)/ Jordan. He is doing a project with improving the yield of pistachio trees.

He has MSc in Horticulture from University of Jordan. During that period, he worked with a project of morphological and biochemical characteristics of olive pollen. He has academic experience from AlJouf University, Saudi Arabia as Assistant Professor in plant biology and from Sebha University, Libya as Assistant Lecturer in Horticulture Department-Faculty of Agriculture.