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POSTERS

EXTENDING STORAGE OF APRICOTS

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Apricots grown in Israel are predominantly of one cultivar, *Rsanana*, and, although ripening with a week or two difference in different areas of the country, have a relatively short marketing season. To extend this marketing season, both orchard manipulations to delay harvest, and altering the gas composition around the fruit by the use of controlled atmosphere, were investigated. Factors which limit storage of apricots are the development of the mesocarp disorders of gel breakdown and internal browning. Gel breakdown can develop in the orchard, but is aggravated by cold storage. In gel breakdown the mesocarp becomes translucent and gelatinous, beginning at the pit, while internal browning all the mesocarp is discolored. Two orchards were sprayed with gibberellin, harvested at two fruit maturity stages, and stored at 0°C. All fruit stored well for 3 weeks. After 5 weeks storage gibberellin decreased the extent of gel breakdown in the less mature fruit, but not in the fruit harvested at a riper stage. Fruits harvested at two maturity stages were also stored in controlled atmosphere with CO₂ concentrations from 5 to 20% and O₂ of 3%. The concentration which best prevented internal disorders for 6 weeks was 10% CO₂, 3% O₂. At 5% CO₂ a great deal of internal browning occurred which was prevented by higher CO₂ concentrations. In the case of controlled atmosphere, the riper fruit were of higher quality than the less mature fruit.

PEACHES HARVESTED AT ADVANCED RIPENING STAGE: POSTHARVEST TREATMENTS FOR MAINTAINING QUALITY.

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Consumers of peaches and nectarines often complain for the low eating quality of these fruits that, for commercial purposes, are harvested before the physiological maturation is completed on the tree. The high quality attained with a delayed harvest is in contrast with the possibility of prolonging the shelf-life. We have studied the effects of two postharvest treatments (refrigeration at 4°C and short gaseous shock with ULO at 20°C) on the changes of flesh firmness and some biochemical and physiological parameters of several peach varieties (white and yellow flesh) selected on the basis of picking time (early, intermediate, and late), and harvested in correspondence of advanced stages of ripening (about 40-50 N). Flesh firmness drop rapidly occurred in control fruits (maintained in air at 20°C). Refrigeration applied throughout the experimental period (10 days) slowed down the softening rate but negatively affected the flavor. ULO (at 20°C) induced higher firmness values than control at the end of the treatments (48h) and during the post-treatment phase (in air). The effects of these treatments appear to be different in relation to the genotype and harvest time. The relationships between flesh softening rate and physiological and biochemical parameters (ethylene evolution, endo-beta-1,4-glucanase activity) are discussed.

TOLERANCE OF A VERY LATE SEASON PEACH CULTIVAR TO TEMPERATURE AND ATMOSPHERE COMPOSITION.

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Jesca is a very late season Spanish peach cultivar for the fresh market where it obtains premium prices. Production, fruits characteristics and marketing are strictly regulated under the *Protected Geographic Indication* <Melocotón de Calanda>. Different conditions have been studied to establish the effects of high CO₂ and low O₂ content and temperature on maintaining postharvest quality parameters after harvest of this rare peach cultivar. Peaches harvested at commercial maturity stage were kept at 0.5°C and 95% HR in two CA conditions to study whether the responses to modified atmosphere are associated to CO₂ increase or to O₂ decrease. The atmospheres assayed were 10%CO₂-21%O₂, 0,03%CO₂-1%O₂ and 0,5%CO₂-1,5%O₂. The atmospheres were established with a flow-through system from mixing bottles and maintained for up to 30 days. Air was used as control. In order to study the behaviour at different storage temperatures peaches were cool stored at 0.5°C, 2°C, 5°C and 10°C. For both experiences, soluble solids content, titrable acidity, pH, flesh texture, skin and flesh colour, enzyme activity, ethanol and acetaldehyde content and pigment evolution were analysed once a week. Sensory attributes were also monitored weekly by trained panelists. Increased CO₂ seems to be more efficient inhibiting changes related to maturity. Effect of temperature on quality shows the excellent behavior of Jesca peaches at 0.5°C, retarding chilling injury appearance.

INFLUENCE OF DELAYED CA STORAGE ON ASCORBIC ACID CONTENT AND BROWNHEART INCIDENCE IN 'ROCHA' PEAR

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One problem that may arise during long term CA storage of pears is the increase of brownheart incidence. Vitamin C, a natural compound of pear is believed to have a protective action against brownheart. The objective of this work was to seek eventual relationship brownheart incidence and ascorbic acid content of 'Rocha' pear after delayed CA storage. The fruits were picked from five orchards, at the optimal harvest date for the region (west) and stored under two CA conditions (2%O₂+0.5%CO₂ and 2%O₂+1.5%CO₂) after different periods of delay. The fruits from one particular orchard showed the lowest sensibility to brownheart incidence and presented an L-ascorbic acid (AA) content generally higher than fruits from the other orchards. After four months of storage in both CA conditions, fruits that had been submitted to CA directly after picking and to CA with 20 days of delay were generally more affected by brownheart than those stored under any other condition. Fruits submitted to 40 and 60 days delay presented tendency to AA higher than samples submitted to 20 days delay. There was no clear difference between the AA content of fruits that had been stored under different CA conditions.