

The Israeli Mango Breeding program and its new cultivars

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Acknowledgments

- Dr. Eli Tomer
- Reuven Dor
- Prof. Uri Lavi
- Michael Noy
- David Saada
- Ami Keynan

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Mango in Israel - climate

- Israel is one of the world's most Northern countries having commercial mango production.
- Lower temperatures during winter, and events of frost limit mango orchards to restricted areas, and occasionally cause damages.
- Unpredictable weather conditions (both very warm and dry events and cold periods) during spring are not ideal conditions for mango flowering and fruit settings.
- The warm and dry summer conditions during fruit development and ripening enables high quality fruits clean of diseases and



Mango in Israel

soil and water conditions

- Soil and water conditions
 - Calcareous soil – Ph above 8.0
 - iron and zinc deficiency
- Irrigation water
 - Low quantity and quality of the water
 - Salinity problems (water and soils)



Ripening calendar for Israeli cultivars

Maya

Kent

Tomy Atkins

Keitt



June

July

August

September

October

November



Research aims

- Development of diverse new elite mango cultivars with high fruit qualities, high yields, long shelf life, that will fit the growth conditions of Israel's growing regions.
- Focusing on European tastes and demands
- Extending the fruit ripening season and expanding to new market demands.



Classical breeding in fruit crops

- Breeding is based on generation of a large germplasm and selection of “interesting” lines
- Hereditability in fruit crops is complex and not completely understood.
- High levels of heterozygosity.
- Long juvenile stage



Use of genetic diversity for mango breeding



Use of genetic diversity for mango breeding

Introduced cultivar plot

- Indian
- East Asian
- Floridan
- Australian
- South African
- Central American

Previous breeding products

- Some turned into commercial products.
- Others disqualified as commercial cultivars, but carry interesting combinations of traits



Stages in mango breeding

- (1) Generation of seedlings from selected parents
- (2) Selection of seedling populations
- (3) Grafting interesting lines and selection under “comercial field” conditions
- (4) Evaluation of outstanding lines in semi-commercial plots.



“Controlled” vs. “Free” pollination`



Seeding



Seedling development



Time tables

Seedlings -	1 – 2 years
First fruiting -	3 – 5 years
Promising identification -	2 – 3 years
Field testing -	2 – 3 years
Semi-commercial -	3 – 5 years

Time for commercial-recommendation
11 – 18 years



Naomi

Local selection



Shelly



Shelly



Resulted from a cross between Tomy Atkins and Keitt.
Very colorful. Prolonged shelf life.

Tango



Very tasteful cultivar, Bright colors, special shape

Tali



Early cultivar— heart shape, attractive — 600 gr.
Good quality — few hectares in Israel.



Orli



Approximately 450 gr. Similar in few hectares in Israel

Omer



Attractive appearance

High yield – 450 gr.

Approximately 150 hectares planted in Israel



Agam



Early cultivar – high quality, attractive color, appealing appearance, very special taste.

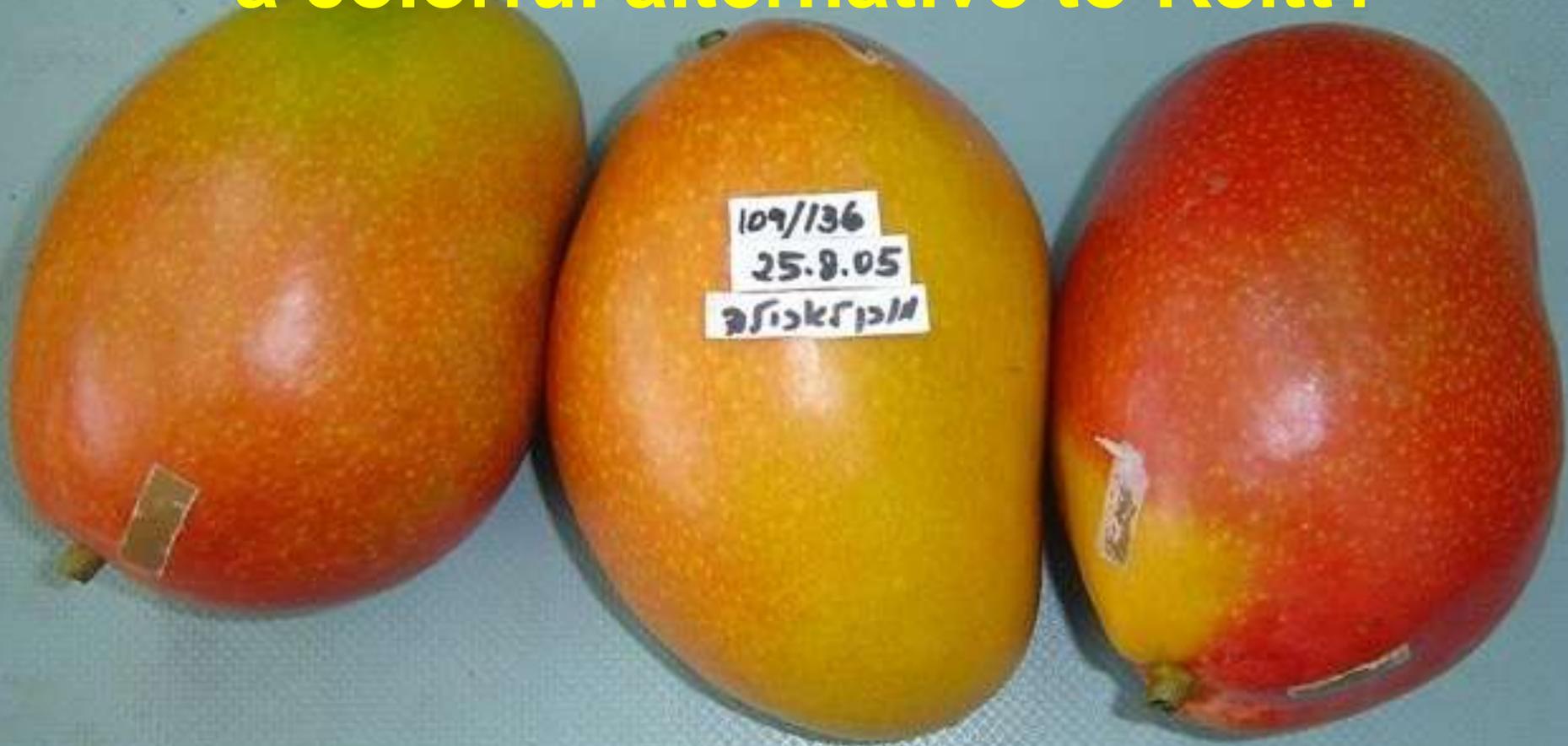


Noa



Noa

a colorful alternative to Keitt?



Middle to late ripening, large (480-810 gr), colorful, elongated. Excellent interior quality.



Ripening calendar for Israeli cultivars



Additional
very early
cultivars

Additional
very late
cultivars



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