

Trends in Citrus Industry and Research in Israel



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Israel citrus industry: by area

North:
3,300 Hectares
(17.5%)

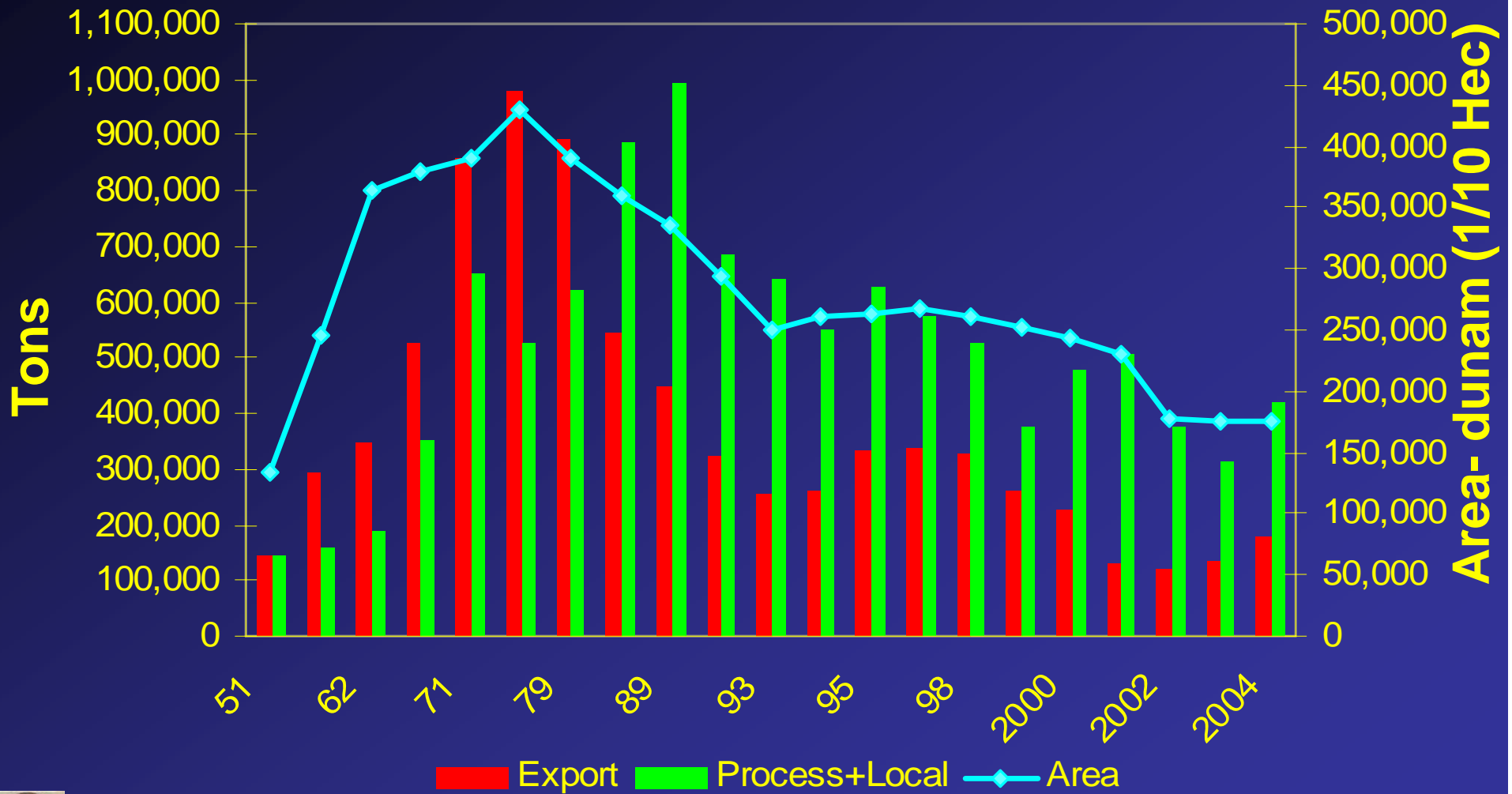
Central coastal:
8,600 Hectares
(45.7%)

South:
7,000 Hectares
(36.8%)

Total citrus plantations
19,000 hectares



Changes in the Israeli Industry; production area and tonnage



Weakness of the Israeli Industry

There are numerous of reasons for the decline in the Israeli citrus industry, among them:

- A shift from agricultural oriented economy to industrial and high-tech oriented economy.
- Increase in the standard of living and a rise in man power



strong competition with other producing countries, such as Spain and Morocco.



Citrus Export from Mediterranean Countries

Year	99 – 00	00 – 01	01 – 02	02 - 03	03 - 04	04 - 05
Oranges (ton 10³)	2640	2427	2670	2808	2887	2526
Spain %	54,2	48,9	54,3	52,4	54.8	45.7
Egypt	8,0	8,5	10,6	11,1	16.2	22.3
Morocco	12,3	10,6	9,0	10,5	8.3	9.2
Greece	10,2	14,6	9,6	9,5	9.1	8.2
Turkey	3,3	5,0	7,0	7,1	4.6	6.5
Israel	2,6	2,9	1,3	2,3	1.0	1.4
others	9,5	9,5	8,3	7,2	6.0	6.7
Grapefruit (ton 10³)	255	235	240	246	246	238
Turkey %	33,3	35,3	46,7	40,7	46.1	36.7
Israel	45,1	40,0	28,3	37,0	28.4	37.0
Cyprus	9,0	11,5	10,4	10,2	11.3	10.9
others	12,5	13,2	14,2	12,2	14.2	15.4
USA (ton 10³)	125	140	127	122	106	



Citrus Export from Mediterranean Countries

Year	99-00	00-01	01-02	02-03	03-04	04-05
Mandarin(ton 10³)	1880	1623	1800	1926	1951	2226
Spain %	70,1	70,4	65,8	68,0	71,9	68,5
Morocco	14,4	8,4	10,6	12,0	10,2	11,3
Turkey	6,5	9,9	13,6	10,4	10,2	12,6
Israel	1,9	1,8	1,4	1,8	1,7	2,0
Others	7,1	9,6	8,7	7,7	6,0	5,6



Future of the Israeli *Citrus* industry?

Development of new varieties



Benefit the grower income



Changes in varieties production in Israel



Classic varieties:

Oranges
Grapefruits
Seedy easy peelers



Easy peelers

seedless (such as):

Nova, Minneola, Or,
Topaz, Mor

ORANGES
GRAPEFRUIT
EASY PEELERS
OTHERS

% total area

1985

2005

>90%

30%

32%

27%

11%



There is a remarkable increase in the diversity of new varieties, demonstrating the readiness of the Israeli grower to adapt to a changing market Israel Citrus Easy Peeler Varieties, 2005.

VARIETY	Hect.	Total	Ton 04/05
Minneola	513		20.000
Nova	1116		28.000
Michal	858		22.000
Murcott	248		10.000
Mor	221		6.000
Winola	133		4.000
Ortanique	227		10.000
Temple	36		900
Ora	120		4.000
Or	750		10.000
Satsuma	293		10.000
Rishon	104		3.000
Nectar	26		500
Merav	26		500
Hadas + Ellendale	29		900
Edit	33		800
Others	77	4810(28%)	

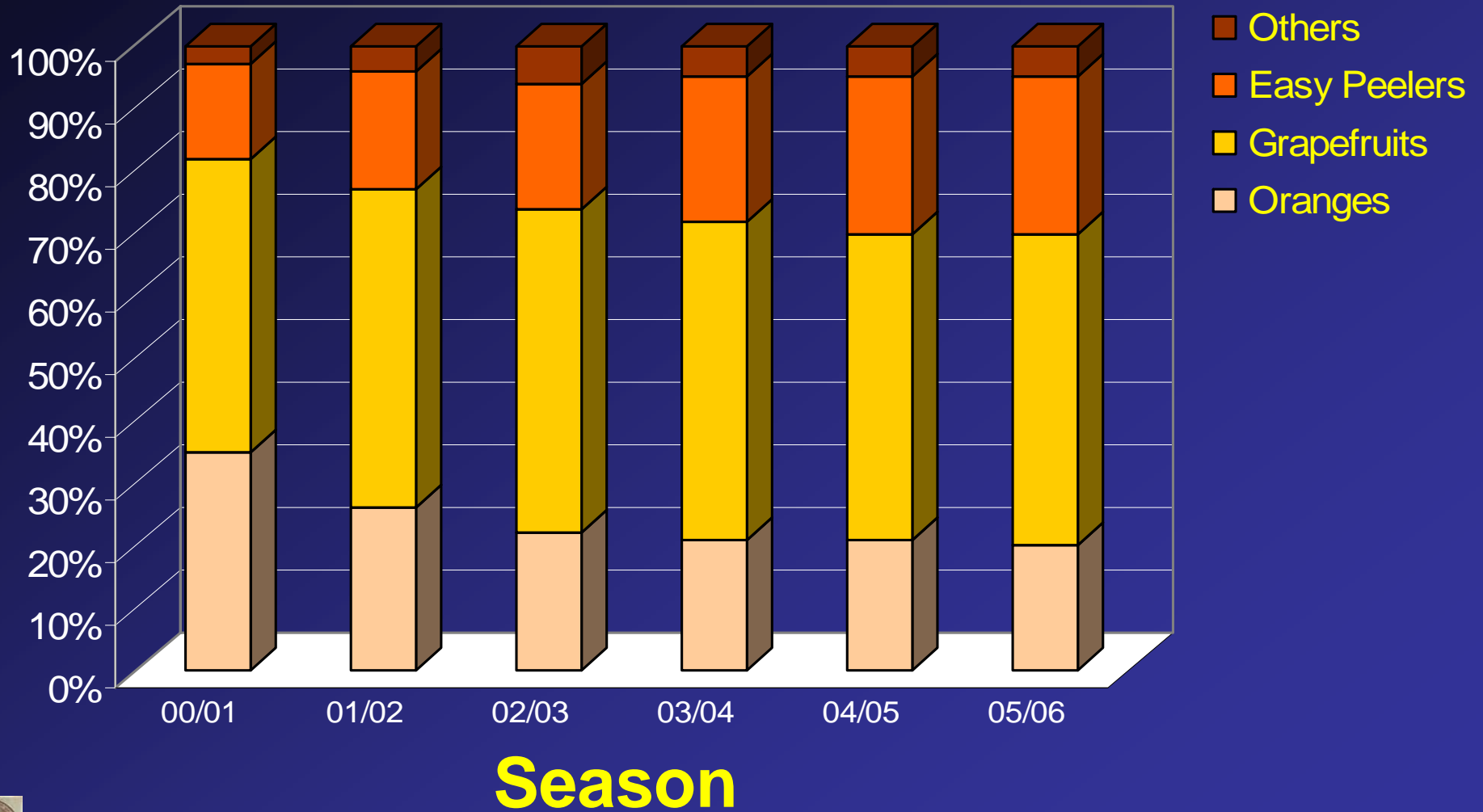


New plantations 2004-2007 Dunams

	2004	2005	2006	2007 (Est.)
Grapefruits	50	1620	4415	6980
Oranges	1350	930	850	1048
Easy Peelers	2450	2695	2770	3292
lemon	150	560	165	250
Total	4000	5805	8200	11570



Distribution of export by varieties 2000-2006



Citrus research in Israel



Adana Workshop June 2007

Current general research Interests among Israeli groups

Physiology/ Molecular Biology/ Genomics/ Metabolomics

Sugar metabolism, acid metabolism, biosynthesis of secondary metabolites involved in flavor and aroma, flowering control.

Irrigation

Solving problems resulting from Irrigation with low quality water (salty, reclaimed, high boron content)
Improving water use efficiency .

Horticulture/ Practice technology

Yield improvement and alternate bearing, thinning and increasing fruit size, improving fruit quality, colored nets, fertilization, peel creasing and splitting.

Post-Harvest

Development of new post-harvest protocols for new easy peelers varieties.
Developing “green” alternative treatments

Pest and diseases control

Fruit fly, *Alternaria*, Mal Secco, mites and aphids, Black fungi, Rio-Grand Gummosis.

Breeding and market surveys

Development of new varieties, easy peelers and others, testing their commercial potential and their distribution



Israeli Breeding Program

Managed by:

ARO:

Nir Carmi
Yoram Eyal

Extension Service:

Shuky Kanonich

Plant Production Board, *Citrus* division:

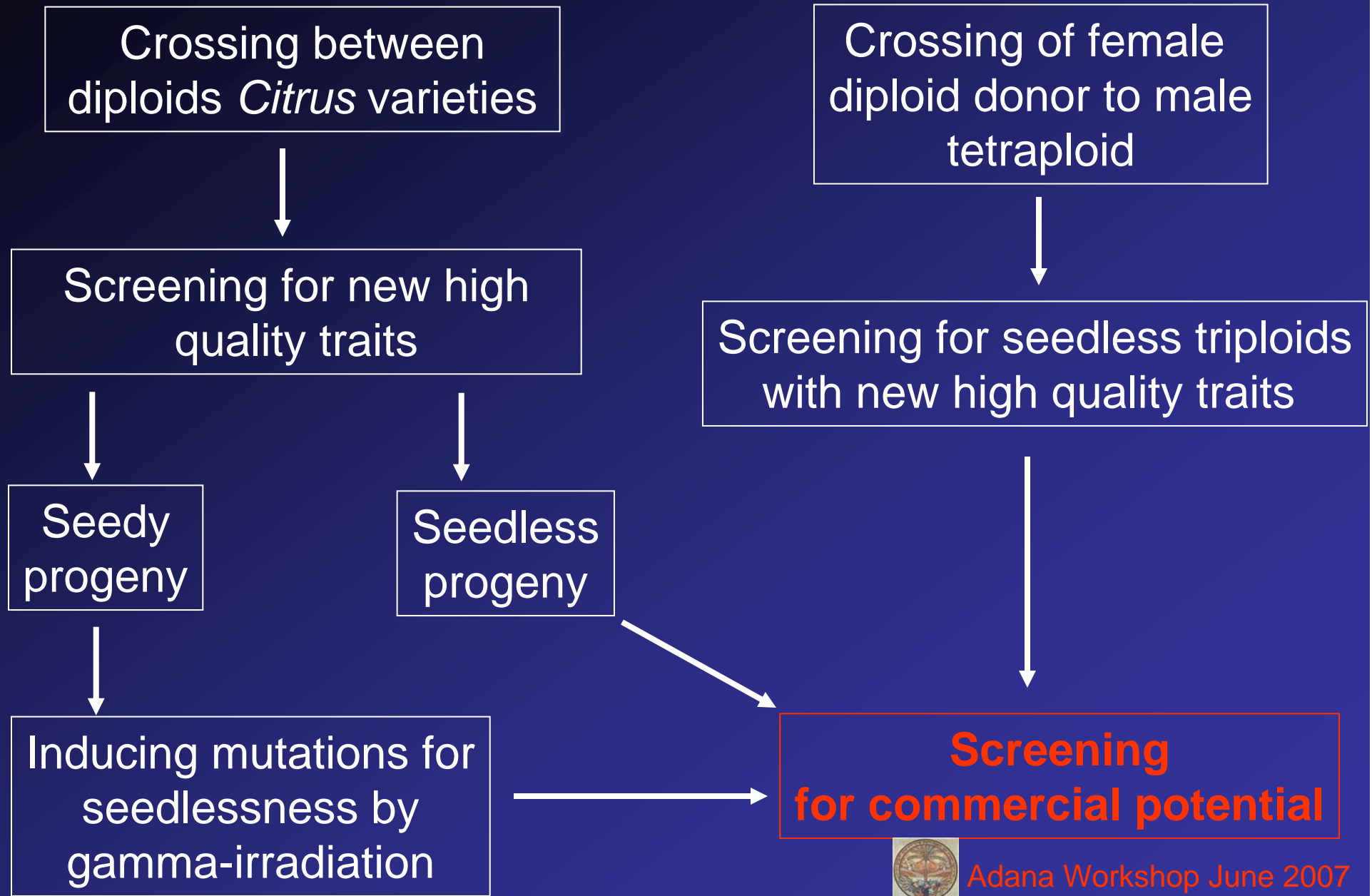
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Aims

- A. Late season and seedless.
- B. Size, Shape and Easy peeling (very important for mandarin).
- C. High yield and low alternate bearing- more then 50 tons per hectare.
- D. Long shelf life.
- E. Pathogens resistance.



Methods



Examples for specific research projects

1. Photo-selective nets: improved productivity and management
2. Plastic mulches: Improvement of water use efficiency and salt tolerance
3. Citrus fruit acidity: citrate metabolism and transport, iron involvement, proteomics
4. Genomics: gibberellins affect on flowering and alternate bearing



Or mandarin grafted on
Sour lemon
Construction time:
Feb 2006



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