53	*Arum italicum* (L) Mill	ARACEAE	1.6	0.37
54	*Lathyrus* sp (L)	LABIATE	1.2	0.28
55	*Pteridium aquilinum* (Kuhn)	POLYPODIACEAE	1.6	0.37
56	*Arnoseris minima* (L)	-	2	0.47
57	*Erika* sp (L) Cav	-	0.4	0.09
58	Others		9	2.11
59	*Rubus ulmifolius* (Schot)	ROSACEAE	27.6	6.44
60	*Dittrichia viscose* (L) W . Greutr.	DIPSACACEAE	23.2	5.43

Effect of Harvest Timing on Olive Fly Infestation and Olive Oil Yields and Quality

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Abstract

During 2001 the optimal harvest time for the Frantoi cultivar, as shown from the results obtained may be the first decade of October. During this period the olive oil content in the fruits was not different from olives harvested later. The percentage of olive fruit fly infestation during this period was low compared with the other treatments (20 October, 01 November, 10 November). Experiments will continue until late November.

Objectives

To determine the optimal time to harvest olives to minimize olive fly infestation and maximize olive oil yield and quality.

IPM Constraints

After temperatures drop below 30°C, olive fly infestation, which decreases oil quality (by increasing % of acidity), increases.

Harvest can be timed to maximize yield and minimize olive fruit fly infestation. If growers can select the optimal time to simultaneously maximize yield and minimize olive fruit fly infestation, their chemical control for olive fly can be possibly reduced.

Research Methods

To find the optimal harvest time when these two processes can be balanced, a grove was selected at the Vlora experimental orchards. The olive varieties cultivated were Frantoi and Kalinjoti, olive oil producing varieties. To identify the period at which oil formation is at its height, the % of oil with respect to the fresh weight of fruits and to the dry matter was determined. The % of oil content of the olive fruits were determined using a soxhlet extractor. The olive fruit samples were collected at ten-day intervals starting from 1 September. Five samples (one per tree) were collected from each olive variety. The fruit drop was recorded counting the number of fruits under the trees. The weights of dropped fruits were recorded from each tree.
The data for olive fruit fly infestation are taken from the pest and disease monitoring experiment.

Data analysis

Data were analysed using JMP statistical software. All the data of olive oil analysis were assessed using analysis of variances. Differences between treatments ($p < 0.05$) were assessed using Tukey-Kramer multiple comparison test.

Results

As shown in the Figures 1 – 6 for the Frantoi cultivar, the quantity of accumulated olive oil started to increase at 10 October and there were no significant differences among treatments for the dates 20 October, 1 November and 10 November. The treatment of 10 October may be an optimal harvest time that allowed a good olive oil yield and at the same time, escaping from the highest olive fruit fly infestations.

Regarding the Kalinjoti cultivar (late ripening cultivar) the trials are underway and will end in December 2000. Data are being collecting until 10 November and the definitive results should be available in January 2002 (Fig 7 - 12).

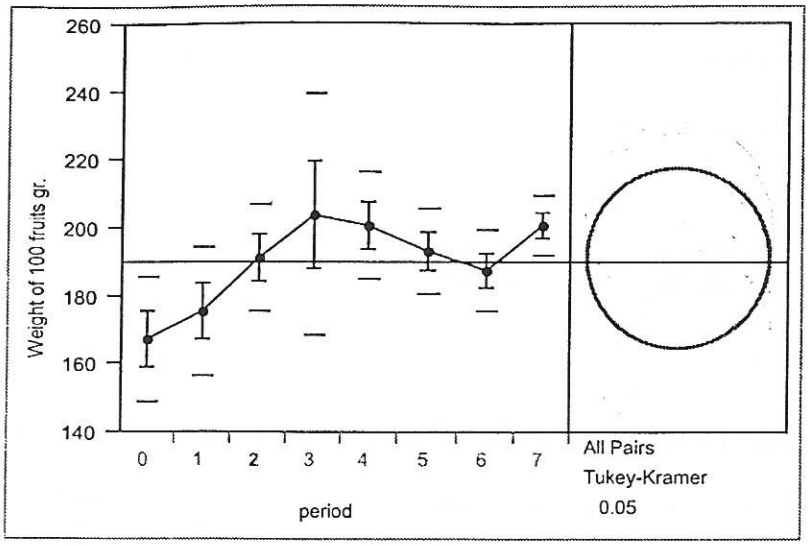

Fig 1 Cv Frantoi Weight of 100 fruits gr. By period

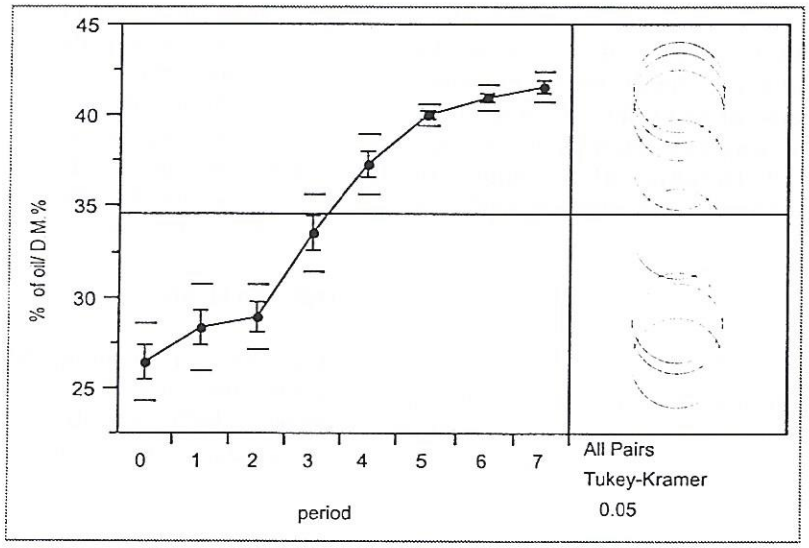

Fig. 2. Cv Frantoi, % of oil/ Dry Matter by period.

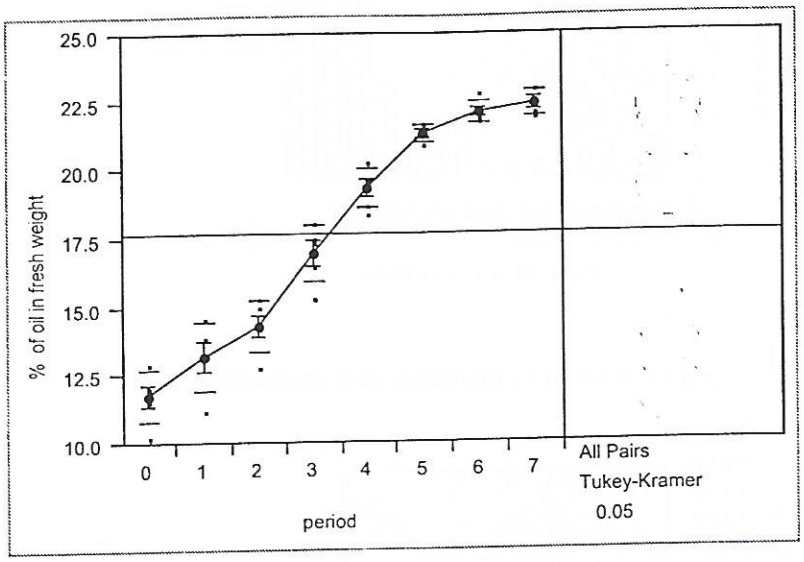

Fig. 3. Cv Frantoi, % of oil in fresh weight by period

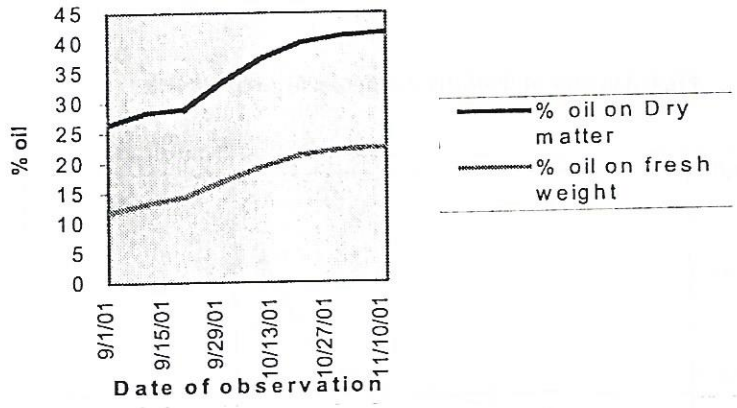

Fig. 4. Olive oil accumulation with respect to the fresh weight and dry matter on cv Frantoi

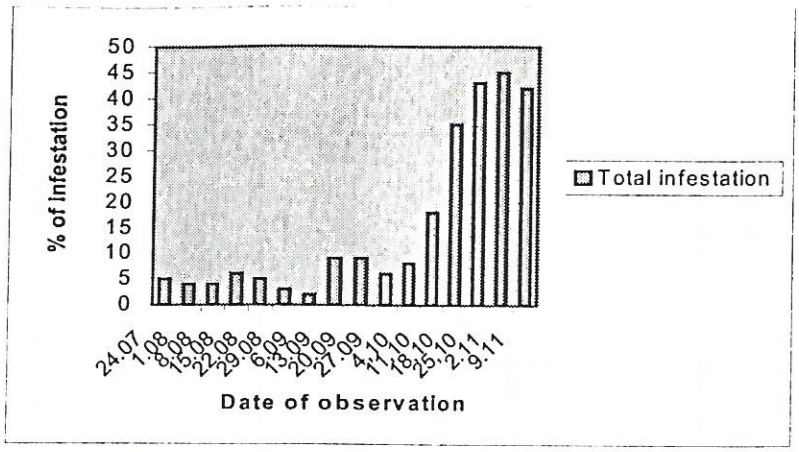

Fig 5 Olive fruit fly infestation on Frantoi cultivar

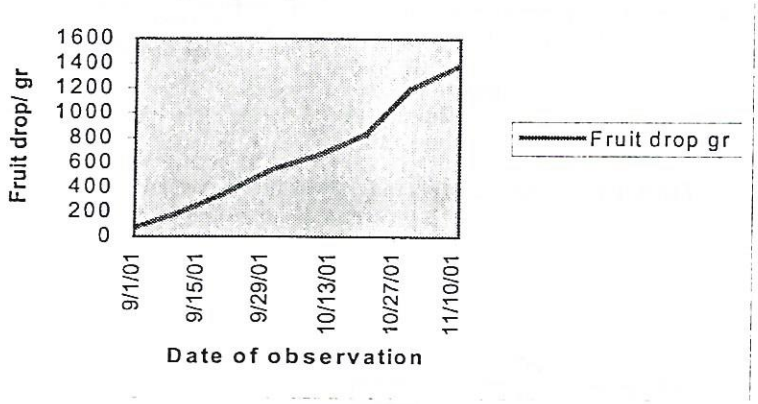

Fig 6 Average of fruit drop/plant on Frantoi cultivar

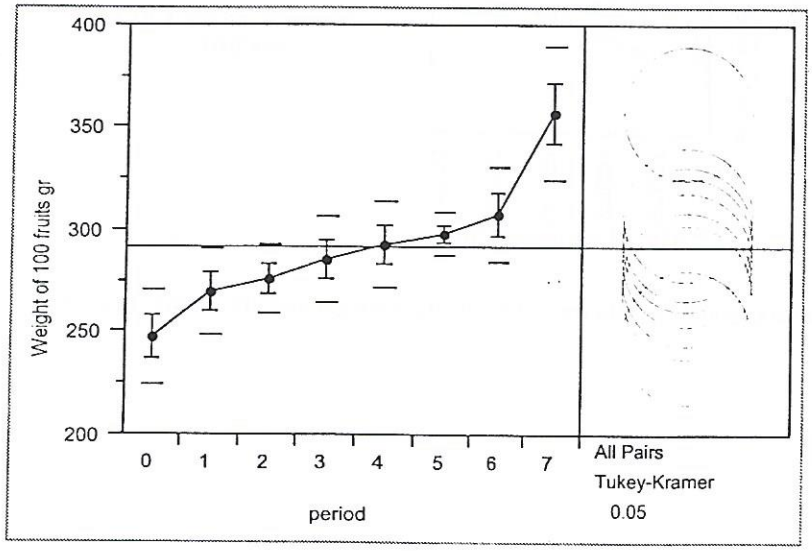

Fig. 7. Cv Kalinjoti, weight of 100 fruits by period

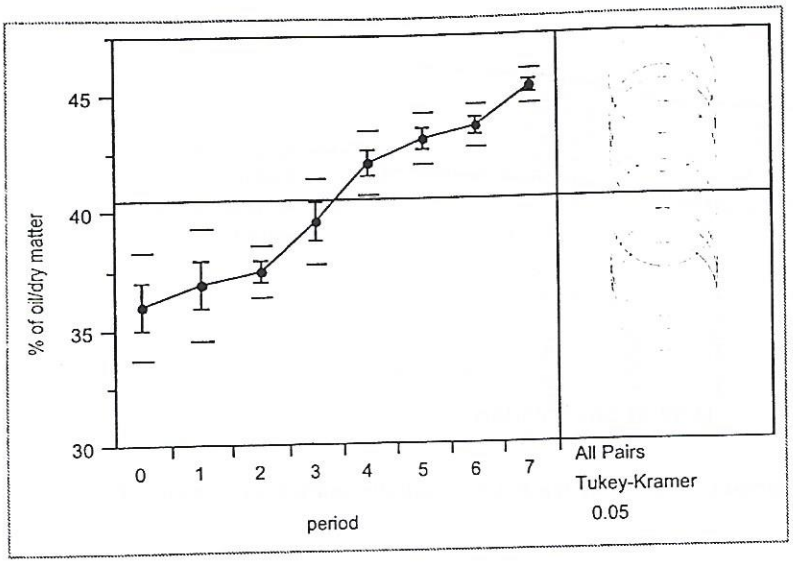

Fig. 8. Cv Kalinjoti % of oil/dry matter by period

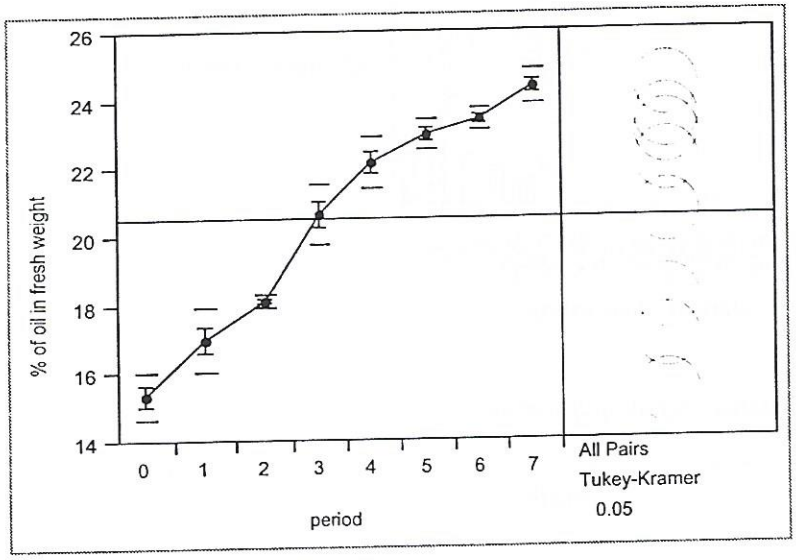

Fig. 9. Cv kalinjoti % of oil in fresh weight by period

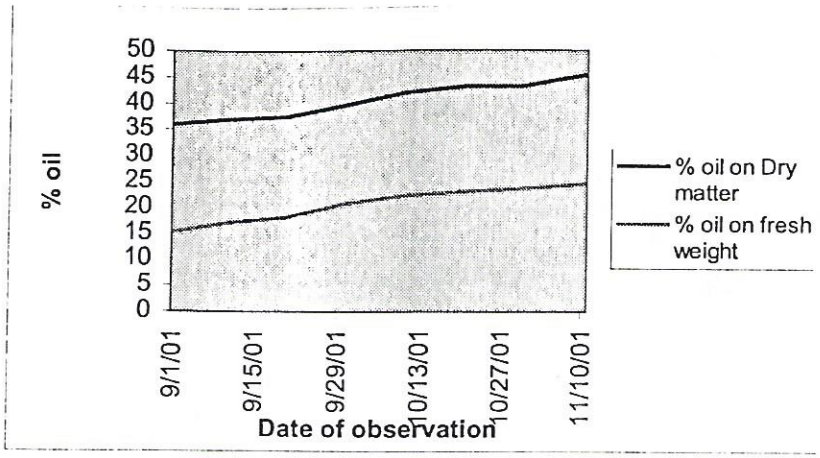

Fig. 10. Olive oil accumulation respect to the fresh weight and dry matter on cv Kalinjot

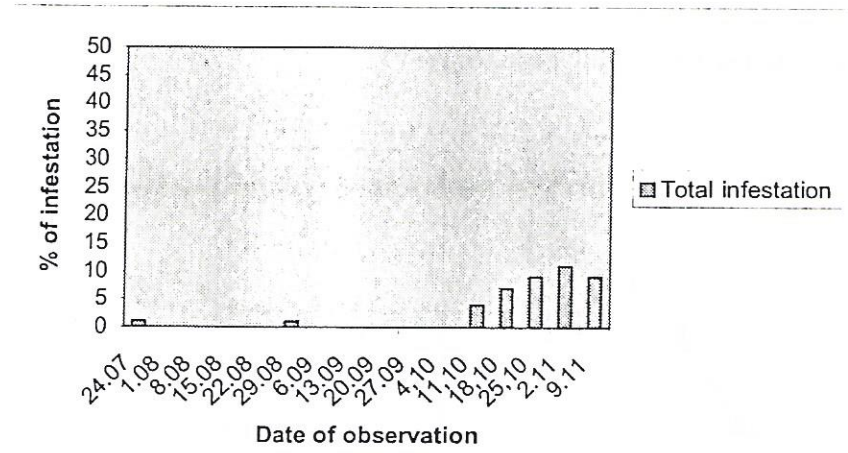

Fig. 11. Olive fruit fly infestation on Kalinjoti cultivar

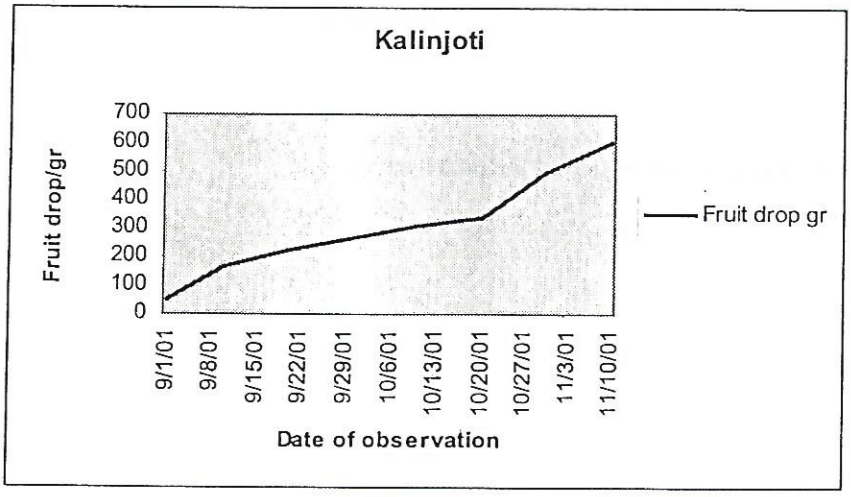

Fig. 12. Average of fruit drop/plant on Kalinjoti cultivar