

RESEARCH NOTE

Duration of Oil Palm Bunch Ripening under Coastal Climate of Andhra Pradesh, India

Harvest forecast and actual yield realised differ mainly due to improper estimation of bunch weight and/or due to seasonal variation like rainy or dry seasons (Quencez, 1991). This study indicated the variability observed in the time taken for oil palm bunch ripening during the dry and rainy periods. Using the observation recorded during the artificial pollination for seed production, an attempt was also made here to find out significance of variability in the time taken for bunch ripening between the seasons and varieties. Three *dura* selfed progenies viz., 271D x 271D, 65D x 65D and 120D x 120D grown in the seed garden of Lakshmipuram in Andhra Pradesh were taken for this study. These *dura* palms were pollinated with local *pisifera* 57P of the same age. The *dura* mother palms pollinated during all the months of 1999 were taken for evaluation. Pollination was done uniformly one week before flower emergence. Bunches were harvested after reaching harvestable maturity. The months included under dry season were January, February, March, April, November and December. Though November and December are comparatively cooler, the inflorescence emerged during these months developed during the dry period. Months included under rainy period were May, June, July, August, September and October. The inflorescence emergence during the dry period of May-June was also included under the rainy period because major development took place during the succeeding rainy period. Thus the data recorded for the two pollinations done per month (from three different *dura* selfed varieties) during the year 1999 were taken for the study.

The results given in Table 1 clearly indicate that the duration of ripening varied with the season. The duration of ripening from the pollinated palms during the rainy season were

Table 1: Variation in bunch ripening period according to season

Selfed <i>dura</i>	Bunch ripening period (days)		Mean
	Dry season (Jan-April & Nov-Dec)	Rainy season (May - Oct.)	
271D x 271D	169	185	177
65D x 65D	162	188	175
120D x 120D	163	186	174
Mean	165	186	176

CV = 5.23%

Characters	SED	CD (0.05)
<i>Duras</i>	2.31	4.64
Seasons	1.89	3.78
Variety x season	3.27	6.56

185, 188 and 186 days in *dura* selfs viz., 271D x 271D, 65D x 65D and 120D x 120D respectively, whereas the duration of ripening of pollinated palms during the dry season were 169, 162 and 163 days respectively for the above families. Average differences noted between two seasons recorded for the above three varieties were 16, 26 and 23 days respectively. The grand average difference recorded was 21 days. Bunch developing during the dry season takes 165 days for the completion of ripening while during the rainy season it takes 186 days to complete ripening. The duration of ripening increases in the case of bunches, in which major development occurs in the rainy season whereas it decreased in the case of bunches formed in the dry season even though they were pollinated at the end of the rainy season. As the coefficient of variation was 5.23%, they are independent of the season. Though water supply obviously plays a role on the length of ripening, other factors such as temperature and sunshine probably interfere with the fruit development process. Consequently the longest ripening period (rainy season) corresponds to little

Table 2: Average temperature, sunshine hours and rainfall during 1999

Month	Temperature (°C)		Sunshine(hr)	Rainfall (mm)
	Minimum	Maximum		
Jan	16.88	30.52	8.05	0.00
Feb	19.00	32.79	8.34	0.30
Mar	21.70	36.77	7.74	0.00
Apr	25.78	36.01	8.77	0.00
May	26.45	35.01	6.83	0.00
Jun	26.14	31.00	7.15	2.40
Jul	24.89	30.00	5.81	5.55
Aug	24.62	30.00	4.34	6.76
Sep	24.84	30.11	5.23	1.28
Oct	23.71	29.91	5.81	4.10
Nov	19.87	32.01	7.25	0.00
Dec	17.76	30.50	7.42	0.00

sunshine (5.8) and low maximum (31°C) and minimum (20°C) temperatures while the shortest corresponds to significantly more sunshine (8.0) and high maximum (33°C) and minimum (25°C) temperatures. The average temperature, sunshine and rainfall during the year 1999 are given in the Table 2. The average length of ripening period was 176 days as per grand mean obtained from the recorded value (under observational controlled pollinated condition). It takes approximately 21 days more for bunches pollinated at the start of the rainy season while

21 days less for the bunches pollinated at the start of dry season. No significant difference was observed among three *duras* for ripening period. The results reveal that the season of development of bunches should be taken into account when yield is estimated based on inflorescence and bunch counts.

REFERENCES

- Quencez, P. 1991. Studies of duration of oil palm bunch ripening according to season. *Oleagineux*, **37**: 515.

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Periodicals: Corley, R.H.V., Hardon, J.J. and Ooi, S.C. 1973. Some evidence of genetically controlled variation in photosynthetic rate of oil palm seedlings. *Euphytica*, **22**: 48-55.

Articles presented in symposia/ conferences/ workshops /seminars: Kochu Babu, M., Ramchandran Nair, K. and Nampoothiri, K.U.K. 1995. Prospects for tropical mushroom cultivation on oil palm factory wastes. Presented in workshop on mushroom cultivation and processing

technology, 28th June, 1995, Tropical Botanical Garden and Research Institute, Palode, Kerala, India.

Articles from symposia proceedings and similar publications: Schreiber, U. and Bilger, W. 1987. Rapid assessment of stress effects on plant leaves by chlorophyll fluorescence measurements. In: *Plant response to stress - Functional analysis in mediterranean ecosystems*. (Eds. Tenhunen, J.D., Catarino, F.M., Lange, O.L. and Oechel, W.C.), Springer, Berlin. pp.27-53.

Books: Conn, E.E. and Stumpf, P.K. 1976. *Outlines of biochemistry*, VI edition, John Wiley and Sons, Inc., New York, 428 p.

Chapters from books: Singh, M. 1989. Often cross pollinated crops: Cotton. In: *Plant Breeding*. (Ed. Chopra, V.L.), Oxford & IBH Pub. Co. Pvt. Ltd., New Delhi, p. 237-249.

Theses: Varghese, P.T. 1994. Effect of nutrition as influenced by irrigation on growth and yield of oil palm (*Elaeis guineensis* Jacq.). Ph.D. Thesis, Kerala Agricultural University, Vellayani Campus, Kerala, India, 319 p.

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