

A note on the Oil Content of Castor Seed (*Ricinus communis* L.) from Spikes of Different Orders.

Castor is an important commercial crop which is industrially valued for the oil which its seeds contain. (Castor plant produces a number of branches and terminal bud of each branch transforms into a fruiting spike. The primary or the main spike is first to emerge, 20-30 days later, secondary branches emerge and at the same intervals tertiary, quaternary. Sethi (1931) observed that earlier formed beans contain more oil than the lateral ones and that the seeds borne on the main fruiting spike are richer in oil content than those on the secondary or tertiary branches.) Studies by Kulkarni (1959) also revealed that the oil content of tertiary spikes differed significantly from that of tertiary spikes. In the present studies, an attempt was made to find out whether such differences exist in the oil content of spikes of various orders in NPH-1 (New Pusa Hyderabad Castor-1), a recent short duration (150 days) castor of high promise, developed by Ankineedu and Kulkarni (1968). HC-6 (Himayat Sagar Castor-6), a popular long duration (240 days) variety of Andhra Pradesh was also included in this type of study to determine varietal differences and also variety \times order interactions.

Sixty random plants were selected per treatment (20 plants/block) from the bulk plots of NPH-1 and HC-6 sown on August 14, 1967, adopting a spacing of 90 cm \times 45 cm, in three uniform blocks of 556.8 sq. m. each. The soil type was clay loam and of medium fertility with a pH of 8.1. The crops received a uniform fertilizer dose of 50 kg N, 60 kg P_2O_5 , and 40 kg K_2O per ha respectively. Three supplemented irrigations were also given. Spikes of various orders from the selected plants were harvested separately as and when they matured, threshed, and cleaned. Oil content was determined from representative samples of each order of spikes by "Standard Soxhlet's Extraction Method" and expressed as percentage of oil. The mean oil percentage data are presented in Table below :-

*Mean Percentage of Oil from Spikes of Different Orders in Two Varieties of Castor
(Based on 60 samples in each treatment)*

Spike Orders	Percentage of Oil	
	NPH-1	HC-6
Primary Spikes	52.80	51.36
Secondary Spikes	52.83	50.66
Tertiary Spikes	52.23	50.90
	51.81	—

	S. Em.	C. D. @ 5% level
Varieties	± 0.38	1.48
Orders	± 0.47	—
Varieties \times Orders	± 0.66	—
Orders within NPH-1	± 0.66	—
Orders within HC-6	± 0.66	—

The results show that there are no significant differences in the oil percentage of different order of spikes in both the varieties.

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Response of Unirrigated Wheat to Placement of Graded Levels of Nitrogen in *Tarai* Soils of U.P.

Tarai region of U. P., reclaimed from degraded forests, is characterised by organic matter rich, sandy loam to clay loam soils with water table at 1-7 ft depth. Wheat is the most important winter grain crop of this region. The present paper reports the response of N. P. 718 variety of wheat in this region to methods of application of N at different levels. Two field experiments, one each during 1963-64 and 1964-65 were conducted at Pant Nagar where the soil contained 2.21% organic matter and 0.12% N with pH of 6.8. Winter rainfall of the two seasons of experimentation was 21.8 mm and 69.0 mm respectively. The treatments consisted of three methods of application of N as ammonium sulphate (M_1 =broadcast just before sowing, M_2 =drilled 6.3 cm below the seed and M_3 =5-7.5 cm on either side of the seed), three levels of N (N_1 =33.6 kg, N_2 =50.0 kg and N_3 67.2 kg N/ha), and one unfertilised control.

These 10 treatments were replicated four times in a randomised block design with gross plot size of 5.5 \times 9.15 sq m. Wheat was sown in the second week of November each year. Seed was dropped at 1 /ha in furrows and