

Studies on Flowering and Pod-set in Redgram (*Cajanus cajan* (L.) Mill Sp.)

By

P. RANGASAMY¹, R. VEERASWAMY² and C. RAMALINGAM³

ABSTRACT

A study on flowering and pod-set in five varieties of redgram was made. Flower production and pod-set were at the maximum during the first three weeks of flowering phase. Genotypic differences in respect of pod-set were evident and maximum of 41.3 per cent for S 41. The mean pod-set for the varieties of redgram was 34 per cent. The grain weight, and pod to grain weight ratio were high at pods formed in initial flowering phase. The 100 grain weight was least influenced by environment.

INTRODUCTION

The yield of redgram is essentially by the length of flowering period, number of flowers and percentage of pod-set. In redgram flower shedding is high. Adequate data on flower shedding and pod-set are lacking and hence the present study was undertaken.

MATERIALS AND METHODS

Five genotypes viz., S19, S31, S41, S42 and CO1 were raised during the summer season of 1973 at Pulses Breeding Station, Tamil Nadu Agricultural University, Coimbatore. The crop was manured with a basal dressing of 25 kg N and 50 kg P_2O_5 /ha. The scheduled plant protection practices were followed during the crop period. The layout was a simple randomised block design with five replications. Five plants from the central rows of plots were chosen for recording the observations. The number of flowers

opened in each day were recorded. Data on pod weight, grain weight, grain size and pod to grain weight ratio were recorded during the weekly intervals.

RESULTS AND DISCUSSION

Flowering and Pod-setting:

Data on flowering and pod-setting are presented in Table 1 and Fig. 1. It is apparent that the number of days taken for first flowering commenced from 60th day to 72nd day and the period of flowering was noticed to range from 37 to 46 days. (Table 1). The rate of flowering differed with the varieties, the maximum is being 19.3 for CO1 and minimum of 9.8 for S19 and S41. The rate of flowering was comparatively higher during the 3rd and 4th week from the date of commencement of flowering.

Pod-setting: A high percentage of pod-set was recorded by the variety S41 (41.3) followed by S31, S19, CO1

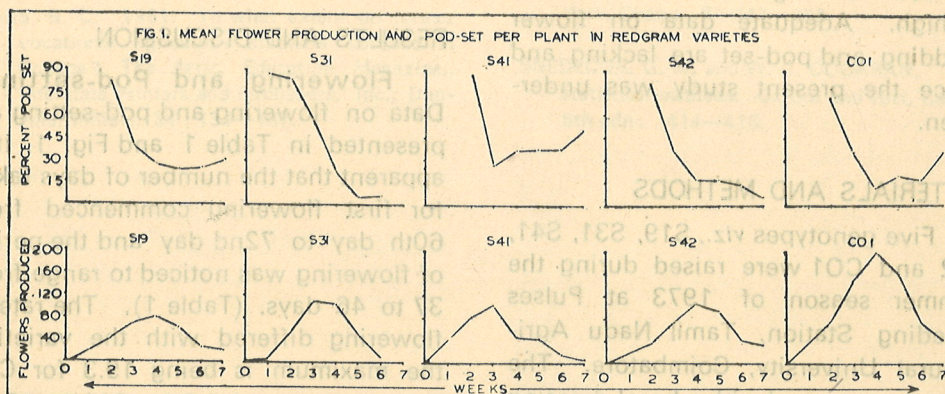
1. Instructor, 2. Associate Professor, Department of Agricultural Botany and 3. Assistant Professor, Seed Technology Department, Tamil Nadu Agricultural University, Coimbatore-641 003.

TABLE 1. Data on number of days taken for first flowering, period of flowering and mean percentage of pod-setting

Varieties	Duration in days	Days to first flowering	Period of flowering (in days)	Rate of flowering per plant per day	Mean percentage fruit-set
CO 1	130	72	46	19.3	31.7
S 31	105	60	40	10.5	38.3
S 41	110	68	37	9.8	41.3
S 42	115	70	38	12.8	24.7
S 19	115	65	39	9.8	31.9

and CO2 (Fig. 1). The maximum percentage of pod-set was recorded with flowers produced during the first three weeks (Fig. 1). The mean pod-set

for the varieties studied was limited to 34 per cent, thus indicating a high degree of flower drops extending to the tune of 66 per cent.



Grain yield: Grain yield was higher as reflected from the higher percentage of pod-set from flowers formed during the first to third week. The variety CO1 registered a maximum grain yield of 6.5 g followed by S19, S31, S42 and S41 during this period (Table 2). The trend of cumulative grain production at weekly intervals for the varieties is furnished in table 2.

Pod to grain weight ratio: The data on pods to grain weight ratio is furnished in table 3. The maximum out turn of grain to pod developed from the flowers produced during the first three weeks was discernable and pod to grain weight ratio decreased subsequent to this period. Here also the comparison of varieties has clearly established this trend and thus it could

TABLE 4. Mean 100 grain weight (g)

Varieties	Weekly periods reckoned from the date of flowering							Mean
	1	2	3	4	5	6	7	
CO 1	—	7.1	7.7	7.2	7.8	8.4	9.0	6.7
S 31	8.1	7.3	7.1	7.6	7.7	8.2	—	6.6
S 41	—	7.3	8.5	8.4	8.4	8.4	8.7	7.0
S 42	—	9.8	9.0	9.7	9.6	9.1	8.9	8.0
S 19	—	8.5	8.4	10.1	9.1	9.2	8.9	7.7

Hundred grain weight: The 100 grain weight was found to be more or less stabilized with the varieties studied irrespective of the period of

flower formation (Table 4). The variety S42 had the maximum 100 grain weight of 9.4 g while S31 had the minimum of 6.6 g.