

Effect of Sowing Dates on Flowering and Maturity of Sesame

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Objectives

This study was conducted to identify the effect of sowing dates on the flowering and maturity and, ultimately, to develop new sesame varieties with short term growth habit.

Materials and Methods

- Total twenty sesame varieties were used for experimental materials. Fifteen sesame varieties were from Korea, three from China and two from USA.
- Five times of sowing dates from April 25 to June 25 were established at the National Crop Experiment Station, Suwon, in 2001 and 2002 by randomized complete block design with three replications.
- Variance to some agronomic traits and physiological responses of days to flowering and maturity, days from flowering to maturity as affected by sowing dates were analyzed. Significant difference level depending on the mean value of days to flowering and maturity under several sowing dates was determined by Duncan's Multiple Range Test.
- Regression coefficient analysis was conducted to compare reduction degrees of days to flowering and maturity according to different sowing dates.

Results and Discussion

- Days to flowering and maturity, days from flowering to maturity and number of capsule per plant were showed significantly different by years, sowing dates and varieties. ○ Interaction between sowing dates and varieties affected to days to flowering and maturity, days from flowering to maturity and number of capsule per plant. Days to flowering and maturity were short as sowing dates were late. Shortness degree of days to flowering and maturity of earlier flowering sesame lines were small under delayed sowing dates indicating earlier flowering sesame varieties were much less affected by day length rather than ones with later flowering.
- Gradient value of regression line on days to flowering and maturity were 0.593 and 0.491 respectively showing days to maturity were much less sensitivity than days to flowering to the change of day length and temperature in the move of sowing dates.

Keywords: sesame, sowing date, days to flowering, days to maturity

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Table 1. Analysis of variance for days to flowering and maturity, days from flowering to maturity, number of capsule per plant, 1,000 seed weight, and seed weight per plant of sesame lines.

Sources	Mean Square					
	DTF [†]	DTM	DFM	NCP	TCW	SWP
Year	1,444**	1,767**	750**	897**	0.862 ^{ns}	15.20 ^{ns}
Sowing date (S)	10,757**	19,138**	1,225**	2,267**	1.183 ^{ns}	19.60 ^{ns}
Genotype (G)	760**	1,233**	129**	704**	0.466 ^{ns}	13.90 ^{ns}
Interaction (S x G)	33*	35*	7*	28*	0.006 ^{ns}	0.05 ^{ns}
Error	18	24	0 8	5	0.008	0.13

† DTF : Days to flowering, DTM : Days to maturity, DFM : Days from flowering to maturity, NCP : Number of capsule per plant, TSW : 1,000 seed weight, SWP : Seed weight per plant *, ** : Significant at the 5%, 1% level respectively

Table 2. Response of days to flowering and maturity, and days from flowering to maturity of total twenty sesame varieties as affected by different sowing dates in 2001 ~ 2002.

Traits	Sowing date	Mean	Minimum	Maximum	Standard deviation
DTF [†]	25 April	86 ^{a*}	72	100	9.42
	10 May	69 ^b	52	91	8.94
	25 May	61 ^{bc}	50	84	8.75
	10 June	56 ^{bc}	47	75	6.95
	25 June	50 ^c	43	70	6.07
DTM	25 April	139 ^a	116	158	12.12
	10 May	120 ^{ab}	101	146	11.26
	25 May	108 ^b	90	135	10.56
	10 June	100 ^{bc}	85	123	8.76
	25 June	94 ^c	81	116	7.68

† DTF : Days to flowering, DTM : Days to maturity, * Means followed by a same letter are not significantly different at the 5% level by DMRT.

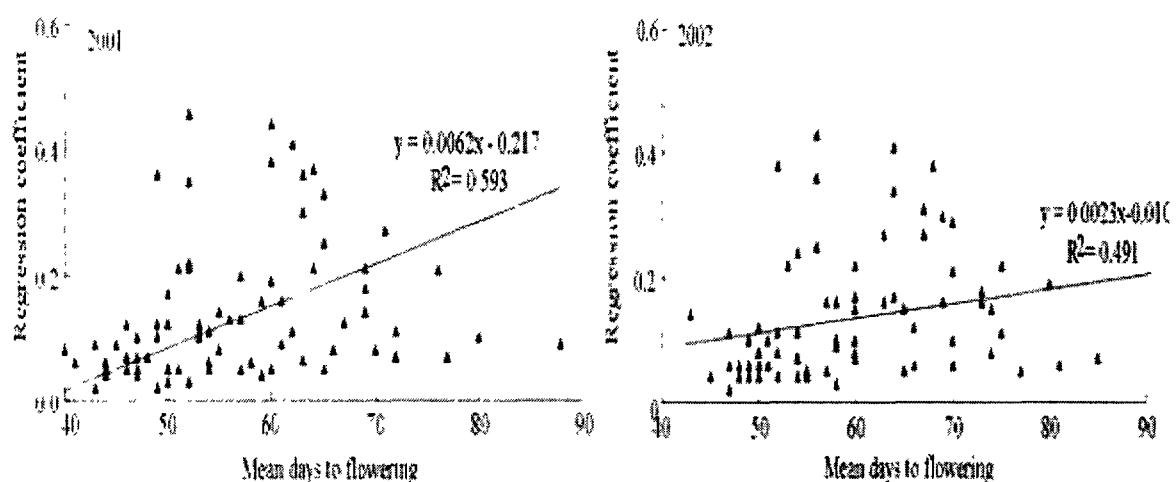


Fig. 1. Response of mean days to flowering of sesame lines as affected by different sowing dates in 2001 ~ 2002.