

B10 파종기 및 재식거리가 작두콩의 생육 및 수량에 미치는 영향

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Effects of Seeding Date and Planting Spaces on Growth and Yield of Swordbean (*Canavalia gladiata* DC.)

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1. Objectives

As swordbean was recently introduced to Korea, cultural technique for stable production, e.g. optimum seeding date and planting space, is not established. This experiment was conducted to elucidate the changes of growth characteristics, yield components, and yield as affected by different seeding dates and planting spaces.

2. Materials and Methods

Experiment 1. To study optimum seeding date swordbeans were seeded five times from March 25 to May 5 with 10 days interval. The row space and plant space were 60 and 40cm, respectively. **Experiment 2.** To study optimum planting space swordbean were seeded on April 15. Row and plant spacing treatments were; 60×30, 60×40, 60×50, 90×30, 90×40 and 90cm×50cm, respectively.

3. Results and Discussion

Days to flowering was shortened by 4~28 days as seeding was delayed. Stem diameter, number of pods per plant, number of seeds per plant, 100-seed weight, and seed yield tended to increase with delaying seeding up to April 5 and then to decrease with further delaying seeding. These results indicate that optimum seeding date of swordbean in unheated polyvinyl house would be early April.

Although, the swordbean exhibited large increases in plant height, number of branches per plant, and main stem diameter at the wider spacings, planting space could be decreased to the 60cm plant-spacing and 30cm row-spacing with no deleterious effect on yield.

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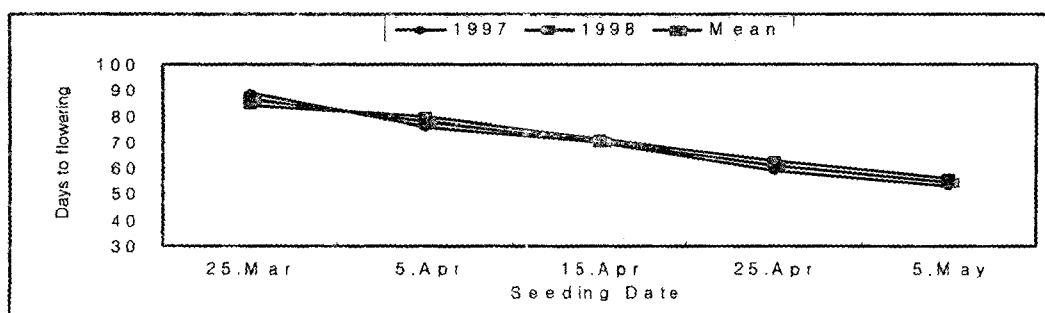


Fig. 1. Days to flowering according to seeding date.

Table 1. Effects of seeding date on yield components and yield of swordbean in unheated polyvinyl house

Seeding date	Plant height (cm)	Node no. on main stem	No. of branches per plant	Stem diameter (mm)	No. of pods per plant	No. of seeds per plant	100-seed weight (g)	Seed yield (ton/ha)
March 25	337 a ¹	24 a	3.2 a	9.1 ab	7.2 a	44.6 bc	247a	2.99 a
April 5	294 b	24 a	3.7 a	9.2 a	6.9 ab	49.7 a	243a	3.07 a
April 15	291 b	24 a	3.7 a	8.8 ab	6.6 ab	46.6 ab	238a	2.83 ab
April 25	286 b	27 a	2.9 a	8.0 ab	5.9 ab	42.9 bc	234a	2.63 ab
May 5	248 c	25 a	2.4 a	7.5 b	5.4 b	41.3 c	228a	2.44 b

¹ Means in a column not followed by the same letter are significantly different at $p \leq 0.05$ based on Duncan's multiple range test.

Table 2. Effects of planting space on yield components and yield of swordbean in unheated polyvinyl house

Planting space	Plant height (cm)	Node no. on main stem	No. of branches per plant	Stem diameter (mm)	No. of pods per m ²	No. of seeds per m ²	100-seed weight (g)	Seed yield (ton/ha)
60×30	292 a ¹	23 a	3.4 a	8.6 b	34.5 a	227 a	234a	2.83 a
60×40	297 a	24 a	3.5 a	8.9 ab	27.9 ab	196 b	238a	2.76 a
60×50	301 a	26 a	3.7 a	8.9 ab	22.3 b	180 bc	239a	2.52 ab
90×30	305 a	25 a	3.6 a	8.9 ab	27.4 ab	183 bc	234a	2.60 ab
90×40	307 a	26 a	3.7 a	9.1 a	25.3 b	174 cd	240a	2.44 ab
90×50	310 a	27 a	3.9 a	9.2 a	21.5 b	154 d	244a	2.29 b

¹ Means in a column not followed by the same letter are significantly different at $p \leq 0.05$ based on Duncan's multiple range test.