

친환경 대체에너지 자원식물인 유채의 지역별 파종기가 수량에 미치는 영향

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Effect of Sowing Date on Yield of Rapeseed with Intimate Environment Substitute Energy Sources in Gyeongsangbug Do, Chungcheongnam Do and Jeonlabug Do Region Korea

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연구목적

친환경 대체에너지 자원식물로서 유망한 유채의 파종기가 우리나라 경북, 충남, 전북지방에서 생육이 수량과 품질에 미치는 영향을 구명코자 함.

재료 및 방법

- 가. 시험장소: 경북(대구), 충남(대전), 전북(익산)
- 나. 공시품종: 유달
- 다. 시비량(kg/10a)
 - 추식: 퇴비-N-P₂O₅-K₂O = 1,000-10-8-8
 - 춘식: 퇴비-N-P₂O₅-K₂O = 800-10-6-6
- 라. 재식밀도: 50×15cm(13,333주/10a)
 - 묘상: 12×12cm 1본립점과
 - 이식: 50×30cm 1본재식
 - 직파: 50×15cm 1본립점과
- 마. 파종기: 지역별 시험성적 참조
- 바. 시험구배치법: 난괴법 3반복

결과 및 고찰

경북(대구)지역에서는 9월 20일 묘상파종, 익년 3월 10일 본포이식에서 10a당 종실수량 211kg으로 가장 증수되었고 충남(대전)지역에서는 9월 10일 직파에서 359kg으로 가장 증수되었으며 전북(익산)에서는 9월 15일 묘상파종, 10월 25일 본포이식에서 202kg으로 가장 증수되어서 지역간에 재배법의 차이가 뚜렷하였다.

Table 1. Variation of inherent characteristics of rapeseed variety Yudal in Kyungsangbug Do region of Korea.

Treatment	Bolting date	Flowering date	Flower ending (date)	Maturing date	Bering date (day)	Growth duration (day)
Sep. 15 seeding in nursery Oct. 25 transplanting in main field	Mar. 26	Apr. 15	May 5	June 11	58	270
Sep. 20 seeding in nursery Mar. 10 transplanting in main field	Mar. 26	Apr. 17	May 9	June 11	54	265
Sep. 30 seeding in nursery Mar. 10 transplanting in main field	Mar. 28	Apr. 18	May 9	June 13	56	257
Oct. 10 seeding in nursery Mar. 10 transplanting in main field	Apr. 3	Apr. 24	May 13	June 16	52	249
Drect seeding in Oct. 10	Apr. 4	Apr. 25	May 11	June 16	53	249
Drect seeding in Oct. 25	Apr. 8	Apr. 28	May 16	June 18	51	236
Drect seeding in Mar. 10	May 16	May 30	June 10	Immature cutting in June 22		236

Table 2. Agronomic characteristics of rapeseed variety Yudal in Kyungsangbug Do region of Korea.

Treatment	Plant height (cm)	Ear length (cm)	No. of branches per plant	No. of pods per ear	Percentage of pod setting (%)	Pod length (cm)	Percentage of seed set (%)
Sep. 15 seeding in nursery Oct. 25 transplanting in main field	106	36	47	29	8.3	5.1	82
Sep. 20 seeding in nursery Mar. 10 transplanting in main field	83	39	46	37	9.8	5.2	82
Sep. 30 seeding in nursery Mar. 10 transplanting in main field	103	55	69	36	11.2	4.8	86
Oct. 10 seeding in nursery Mar. 10 transplanting in main field	105	55	62	36	10.9	4.8	81
Direct seeding in Oct. 10	80	38	27	27	9.9	4.9	85
Direct seeding in Oct. 25	98	43	29	31	10.1	3.9	88
Direct seeding in Mar. 10	93	27	15	20	6.1	1.9	0

Table 3. Yield characteristics of rapeseed Yudal in Kyungsangbug Do region of Korea.

Treatment	Yield (10a)			Wt. of 1ℓ(g)	Wt. of 1,000 grains(g)
	Seed (kg)	Index	Seed capacity (ℓ)		
Sep. 15 seeding in nursery Oct. 25 transplanting in main field	182.6	100	274	666	4.1
Sep. 20 seeding in nursery Mar. 10 transplanting in main field	211.2	116	315	670	4.7
Sep. 30 seeding in nursery Mar. 10 transplanting in main field	191.4	105	187	667	4.7
Oct. 10 seeding in nursery Mar. 10 transplanting in main field	201.5	110	303	666	4.3
Direct seeding in Oct. 10	154.3	85	232	666	5.0
Direct seeding in Oct. 25	136.6	75	206	662	3.3
Direct seeding in Mar. 10	32.0	18	56	568	2.1

C.V.(%) - 4.98

L.S.D.5% - 12.07

1% - 17.78

Table 4. Variation of inherent characteristics of rapeseed variety Yudal in Chungcheongnam Do region of Korea.

Treatment	Bolting date	Flowering date	Flower ending (date)	Maturing date	Bearing date (day)	Growth duration (day)
Sep. 10 sowing in nursery Mar. 10 transplanting in main field	Mar. 21	Apr. 21	May 15	June 20	59	262
Sep. 20 sowing in nursery Mar. 10 transplanting in main field	Mar. 24	Apr. 20	May 13	June 20	58	272
Sep. 30 sowing in nursery Mar. 10 transplanting in main field	Apr. 9	Apr. 24	May 21	June 23	59	263
Sep. 15 sowing in nursery Oct. 25 transplanting in main field	Mar. 25	Apr. 27	May 12	June 18	60	280
Drect seeding in Sep. 10	Mar. 15	Apr. 10	May 5	June 10	59	280
Drect seeding in Mar. 10	May 27	June 10	June 25	July 16	35	198

Table 5. Agronomic characteristics of rapeseed variety Yudal in Chungcheongnam Do region of Korea.

Treatment	Plant height (cm)	Ear length (cm)	No. of branches per plant	No. of pods per ear	Percentage of pod setting(%)	Pod length (cm)	Percentage of seed set(%)
Sep. 10 sowing in nursery Mar. 10 transplanting in main field	95	61	36	39	10.7	5.9	94
Sep. 20 sowing in nursery Mar. 10 transplanting in main field	81	60	33	37	11.1	6.0	97
Sep. 30 sowing in nursery Mar. 10 transplanting in main field	83	56	26	31	13.0	6.4	93
Sep. 15 sowing in nursery Oct. 25 transplanting in main field	105	62	43	49	10.3	6.2	100
Drect seeding in Sep. 10	108	50	26	48	8.6	5.7	95
Drect seeding in Mar. 10	112	49	8	39	8.4	5.9	92

Table 6. Yield characteristics of rapeseed variety Yudal in Chungcheongnam Do region of Korea.

Treatment	Yield (10a)			Wt. of 1 ℓ (g)	Wt. of 1,000 grains (g)
	Seed (kg)	Index	Seed capacity (ℓ)		
Sep. 10 sowing in nursery Mar. 10 transplanting in main field	296.3	96	431	689	3.3
Sep. 20 sowing in nursery Mar. 10 transplanting in main field	285.0	93	419	681	3.4
Sep. 30 sowing in nursery Mar. 10 transplanting in main field	281.3	92	426	662	3.1
Sep. 15 sowing in nursery Oct. 25 transplanting in main field	307.4	100	467	660	3.5
Direct seeding in Sep. 10	359.5	117	502	662	3.3
Direct seeding in Mar. 10	119.4	39	180	667	2.5

C.V.(%) - 4.43
L.S.D.5% - 22.39
1% - 31.77

Table 7. Variation of inherent characteristics of rapeseed variety Yudal in Jeonlabug Do region of Korea.

Treatment	Bolting date	Flowering date	Flower ending(date)	Maturing date	Bearing date(day)	Growth duration (day)
Sep. 15 sowing in nursery Oct. 25 transplanting in main field	Mar. 25	Apr. 13	May 4	June 8	0	1
Sep. 15 sowing in nursery Oct. 30 transplanting in main field	Mar. 25	Apr. 13	May 5	June 8	0	1
Sep. 15 sowing in nursery Nov. 5 transplanting in main field	Mar. 27	Apr. 13	May 5	June 8	0	1
Set. 20 sowing in nursery Oct. 25 transplanting in main field	Mar. 23	Apr. 14	May 6	June 9	0	1
Set. 20 sowing in nursery Oct. 30 transplanting in main field	Mar. 25	Apr. 15	May 6	June 9	0	1
Sep. 20 sowing in nursery Nov. 5 transplanting in main field	Mar. 27	Apr. 15	May 7	June 9	0	1
Sep. 25 sowing in nursery Oct. 25 transplanting in main field	Mar. 27	Apr. 15	May 6	June 10	0	1
Sep. 25 sowing in nursery Oct. 30 transplanting in main field	Mar. 27	Apr. 15	May 7	June 10	0	1
Sep. 20 sowing in nursery Nov. 5 transplanting in main field	Mar. 27	Apr. 15	May 6	June 10	0	1

Table 8. Agronomic characteristics of rapeseed variety Yudal in Jeonlabug Do region of Korea.

Treatment	Plant heigh (cm)	Ear length (cm)	No. of pods per ear	Percentage of pod setting(%)	Pod length (cm)
Sep. 15 sowing in nursery Oct. 25 transplanting in main field	113	35	35	8.1	5.8
Sep. 15 sowing in nursery Oct. 30 transplanting in main field	110	34	35	7.9	5.7
Sep. 15 sowing in nursery Nov. 5 transplanting in main field	104	32	33	8.5	5.8
Set. 20 sowing in nursery Oct. 25 transplanting in main field	112	34	35	8.1	5.7
Set. 20 sowing in nursery Oct. 30 transplanting in main field	110	33	35	7.3	6.1
Sep. 20 sowing in nursery Nov. 5 transplanting in main field	105	33	33	8.6	6.1
Sep. 25 sowing in nursery Oct. 25 transplanting in main field	105	34	31	8.6	5.8
Sep. 25 sowing in nursery Oct. 30 transplanting in main field	95	33	32	8.1	6.1
Sep. 25 sowing in nursery Nov. 5 transplanting in main field	98	35	33	8.3	5.8

Table 9. Yield characteristics of rapeseed variety Yudal in Jeonlabug Do region of Korea.

Treatment	Yield (10a)			Wt. of 1ℓ(g)	Wt. of 1,000 grains(g)
	Seed yield (kg)	Index	Seed capacity (ℓ)		
Sep. 15 sowing in nursery Oct. 25 transplanting in main field	202.4	100	313.5	646	3.0
Sep. 15 sowing in nursery Oct. 30 transplanting in main field	194.7	96	300.6	648	3.0
Sep. 15 sowing in nursery Nov. 5 transplanting in main field	168.5	83	260.0	648	3.0
Set. 20 sowing in nursery Oct. 25 transplanting in main field	196.0	97	305.4	642	2.9
Set. 20 sowing in nursery Oct. 30 transplanting in main field	185.7	92	289.3	641	2.9
Sep. 20 sowing in nursery Nov. 5 transplanting in main field	155.6	77	244.3	637	2.9
Sep. 25 sowing in nursery Oct. 25 transplanting in main field	169.9	84	266.1	639	3.0
Sep. 25 sowing in nursery Oct. 30 transplanting in main field	163.2	81	254.1	642	2.9
Sep. 20 sowing in nursery Nov. 5 transplanting in main field	153.2	76	238.6	642	2.9

C.V.(%) - 7.64
L.S.D.5% - 8.26
1% - 12.58