

東海岸 冷潮風地 벼 요철골 湛水直播 播種限界期 究明

嶺南農業試驗場 : 黃正東*, 辛東庚, 李基榮, 朴成泰, 金純哲

Determination of Critical Seeding Date in the Corrugated Furrow Seeding Rice in the Eastern Coastal Area

National Yeongnam Agric. Experi. Sta. : C. D. Hwang*, D. K. Shin, K. Y. Lee, S. T. Park, S. C. Kim

試驗目的

東海岸 冷潮風地帶에서 低費用 省力栽培技術인 벼 요철골 湛水直播栽培時 熟期別 安全 播種限界期를 設定하고자 함

材料 및 方法

早生種인 尙州벼, 中生種인 東海벼, 中晩生種인 花南벼를 供試하여 條間 25cm의 요철골을 만든후 湛水하여 播種期를 4月 25日부터 6月 15日까지 10日 間隔으로 6회에 걸쳐 播種量을 ha當 45kg으로 播種하였다.

施肥量은 ha當 N-P₂O₅-K₂O를 110-100-110kg으로 施肥하였고, 窒素分施比率은 基肥 50%, 6葉期 30%, 穗肥 20%의 比率로 分施하였으며, 磷酸은 全量 基肥로, 加里는 基肥 80%, 穗肥 20%로 分施하였다.

結果 및 考察

1. 出芽所要日數는 6~15日로 播種時期가 늦을수록 빨랐고, 立毛數는 95~111個/m²로 適正 立毛確保에는 問題가 없었으며, 播種後 出芽期까지의 最高 風速 平均値가 높을수록 골내種子比率은 높아가고 줄기埋沒深도 깊어 가는 傾向이었다.
2. 稈長은 3品種 모두 5月 15日 播種에서 가장 길었고, 玄米 千粒重은 5月 25日 播種에서 가장 무거웠다.
3. 出穗期로 본 (登熟積算溫度 800℃ 기준) 播種限界期는 尙州벼 6月 15日, 東海벼 6月 5日, 花南벼 5月 25日이었다.
4. 實收量은 10a당 尙州벼 524~609kg, 東海벼 485~594kg, 花南벼 435~584kg으로, 尙州벼는 5月 5日, 東海벼와 花南벼는 5月 15日 播種에서 收量이 가장 높았다.
5. 實收量이 大體의으로 많았던 5月 15日 播種日을 基準으로 했을 때, 10% 減收線으로 본 播種限界期는 尙州벼는 6月 5日, 東海벼와 花南벼는 5月 25日이었다.
6. 完全米 比率은 67-84%로서 3品種 모두 5月 15日 播種에서 가장 높았고, 이보다 播種時期가 빠르거나 늦을수록 낮았으며, 4月 25日 播種에서 胴割米 比率이 가장 높았고, 6月 5日과 6月 15日 播種에서 靑米와 靑死米 比率이 높았다.

Table 1. Varietal difference of heading date and cumulative ripening temperature at different seeding dates in the corrugated furrow seeding rice.

Cultivar	Index	Seeding date					
		April 25	May 5	May 15	May 25	June 5	June 15
Sangjubyeo	Heading date	Aug. 1	Aug. 9	Aug. 13	Aug. 17	Aug. 20	Aug. 26
	Cumulative ripening temperature(°C)	(998)	(953)	(930)	(905)	(885)	(833)
Donghaebyeo	Heading date	Aug. 16	Aug. 23	Aug. 25	Aug. 27	Aug. 29	Sep. 2
	Cumulative ripening temperature(°C)	(911)	(855)	(838)	(825)	(804)	(757)
Hwanambyeo	Heading date	Aug. 22	Aug. 25	Aug. 27	Aug. 29	Aug. 31	Sep. 4
	Cumulative ripening temperature(°C)	(865)	(838)	(825)	(804)	(780)	(734)

□ : Cumulative ripening temperature 800°C

Table 2. Emergence period, seedling stand, floating seedling at different seeding dates and varieties in the corrugated furrow seeding rice.

Seeding Date	Cultivar	Emergence period (Days)	Seedling stand (No/m ²)	Average value of maximum wind speed ¹ (m/sec)	Floating seedling (%)	Seeding stand within furrow (%)	Depth of buried culm base ² (cm)
April 25	Sangjubyeyo	14	102	7.4	2.9	69.9	2.8
	Donghaebyeyo	15	101	7.6	2.6	75.0	2.9
	Hwanambyeyo	15	99	7.6	2.7	74.5	2.9
May 5	Sangjubyeyo	12	108	7.5	2.8	70.4	2.8
	Donghaebyeyo	13	95	7.5	2.5	70.5	2.8
	Hwanambyeyo	13	97	7.5	2.7	71.1	2.8
May 15	Sangjubyeyo	10	102	7.5	2.6	71.3	2.8
	Donghaebyeyo	11	96	7.6	2.4	75.0	2.9
	Hwanambyeyo	11	98	7.6	2.6	74.2	2.9
May 25	Sangjubyeyo	9	110	6.5	2.4	67.3	2.6
	Donghaebyeyo	9	99	6.5	2.7	67.7	2.6
	Hwanambyeyo	9	102	6.5	2.6	67.5	2.6
June 5	Sangjubyeyo	7	111	5.2	3.0	66.4	2.5
	Donghaebyeyo	7	107	5.2	2.8	65.1	2.5
	Hwanambyeyo	7	104	5.2	2.6	65.4	2.5
June 15	Sangjubyeyo	6	108	4.1	2.8	63.0	2.4
	Donghaebyeyo	6	108	4.1	2.5	61.8	2.4
	Hwanambyeyo	6	102	4.1	2.6	62.1	2.4

¹ : Average value of maximum wind speed from seeding to emergence period,
² : 60 days after seeding

Table 3. Agronomic characteristics, perfect kernel and grain yield as affected by different seeding dates and varieties in the corrugated furrow seeding rice.

Seeding date	Cultivar	Culm length (cm)	Panicle length (cm)	Panicle number (No/m ²)	Spikelet number		Filled grain ratio (%)	1000 grain weight (g)	Perfect kernel (%)	Total dry weight (ton/ha)	Harvest index (%)	Milled rice yield (ton/ha)	Yield index
					/Panicle	/m ²							
April 25	Sangjubyeyo	68	20.2	393	86	34,228	85	20.3	76.7	14.39	49.6	5.50	92
	Donghaebyeyo	75	20.0	436	89	38,804	82	20.4	77.0	15.53	45.8	5.43	91
	Hwanambyeyo	80	19.0	397	94	37,318	85	20.3	79.0	15.96	44.1	5.27	90
May 5	Sangjubyeyo	71	19.1	449	89	39,961	87	20.4	82.3	16.16	49.0	6.09	102
	Donghaebyeyo	77	19.1	464	92	42,688	84	20.7	83.0	16.01	47.9	5.88	99
	Hwanambyeyo	79	19.4	409	94	38,446	84	20.4	83.0	16.55	48.4	5.83	100
May 15	Sangjubyeyo	75	19.2	455	88	40,040	87	20.5	83.7	15.81	49.4	5.99	(100)
	Donghaebyeyo	82	19.5	463	91	42,133	84	20.7	84.0	14.39	46.9	5.94	(100)
	Hwanambyeyo	86	18.9	488	94	45,872	84	20.6	83.7	17.07	46.6	5.84	(100)
May 25	Sangjubyeyo	69	19.0	409	86	35,174	86	20.8	82.3	15.69	49.0	5.88	98
	Donghaebyeyo	75	19.3	461	89	41,296	83	21.2	81.7	15.57	47.9	5.71	96
	Hwanambyeyo	75	19.1	421	90	37,890	83	20.7	80.7	16.03	47.9	5.69	97
June 5	Sangjubyeyo	70	19.3	440	82	36,080	83	20.6	75.0	14.89	49.7	5.72	95
	Donghaebyeyo	79	19.6	424	86	36,464	80	20.7	76.0	14.69	47.0	5.29	89
	Hwanambyeyo	79	19.3	432	88	38,016	81	20.6	75.0	15.11	45.8	5.05	86
June 15	Sangjubyeyo	68	19.2	430	80	34,400	80	20.7	69.0	14.55	47.0	5.24	87
	Donghaebyeyo	75	18.9	433	81	33,341	77	20.8	69.7	13.78	46.6	4.85	82
	Hwanambyeyo	70	18.9	433	85	36,805	70	20.5	67.0	13.03	46.3	4.35	74

C. V.(%) ----- 2.9 --- 1.9 --- 2.7
L.S.D.(5%) Seeding date ----- 42.3 --- 0.8 --- 14.0
Cultivar ----- 29.9 --- 0.6 --- 9.9
Seeding date×Cultivar ----- 73.2 --- 1.5 --- 24.3