앞마당육묘기 이용 육묘시 모 생육에 미치는 영향

영남농업연구소 : 김상열*, 황동용, 강종래, 박성태, 김정일, 김덕수, 이준희, 안종웅, 구연충

Factors Affecting Growth of Rice Seedling in the Seedling Raising Shelf

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연구목적

못자리 육묘를 대체할 수 있는 생력 저비용 앞마당육묘기 이용 육묘시 육묘기술을 확립하고자 함

재료 및 방법

○ 시험품종 : 일미벼(밀양), 상미벼(상주)
○ 재배법
- 파종기 : 4.27(밀양), 5.5(상주) - 이앙 : 25일모
- 파종량 : 130g/상자 - 상토 : 시판상토
- 육 묘 : 앞마당육묘기(7단, 35상자)

○ 처리내용
- 설치방향 : 남북, 동서, 북동, 북서
- 물 관 리 : 담수, 1, 2, 3, 4, 5일 간격 관수
- 육묘방법 : 앞마당육묘기, 부직포못자리

결과 및 고찰

○ 앞마당육묘기 이용 육묘시 남북방향 육묘가 동서, 북동, 북서 방향보다 육묘기의 하단까지 광 투과율이 높아 주당 건물중이 무겁고 모 충실도가 높았다.
○ 물관리는 3일간격 관수가 엽수 및 건물중은 각각 3.5~3.6매, 1.20~1.00g/50주로 1일 관수와 차이가 없었으나 4일간격 관수는 3일에 비해 엽수 및 건물중이 유의하게 떨어졌다.
○ 앞마당육묘기 육묘시 파종후 25일 후 모생육은 엽수, 본당 건물중 및 모 충실도는 관행 못자리 육묘에 떨어졌으나 성숙기 벼 생육 및 쌀 수량은 차이가 없었다.

Table 1. Seedling growth of rice as affected by direction of seedling raising shelf placement.

Direction	Seedling height (cm)	Leaf stage (no.)	Dry weight (mg/plant)	Seedling health score (g/cm)
South-North	16.3	2.4	14.9	0.92 a
East-West	17.9	2.4	14.4	0.83 b
North-East	17.3	2.4	14.5	0.84 b
North-West	16.9	2.4	14.7	0.87 ab

* 연락처 : 전화 055-350-1174 E-mail : kimsy3@rda.go.kr

Table 2. Light transmission ratio in the layer of the seedling raising shelf.

Layer from upper most	Light transmission ratio(%)			
	South-North	East-West	North-East	North-West
1	100	100	100	100
2	60.5	54.9	57.5	55.2
3	59.2	54.5	56.7	55.3
4	59.8	52.7	54.5	55.4
5	59.7	52.5	54.3	53.6
6	57.7	50.9	53.6	53.4
7	55.0	50.5	54.1	53.2
Average	58.7	52.7	55.1	54.4

Table 3. Seedling growth of rice as affected by water management in seedling raising shelf.

Water irrigation interval (day)	Seedling height (cm)	Leaf stage (no.)	Root length (cm)	Dry weight(g/50 plants)		
				Seedling	Root	Total
Flooding	15.8	3.5	5.6	0.92 a	0.28 a	1.20 a
1	16.2	3.6	5.9	0.87 ab	0.22 b	1.09 b
2	15.7	3.6	5.0	0.84 ab	0.20 bc	1.04 b
3	15.0	3.5	5.1	0.80 bc	0.20 bc	1.00 b
4	15.0	3.2	4.9	0.70 c	0.17 c	0.87 c
5	15.3	3.0	4.0	0.50 d	0.12 d	0.62 d

Table 4. Seedling growth of rice as affected by seedling raising methods.

Seedling raising method	Milyang				Sangju			
	Seedling height (cm)	Leaf stage (no.)	Dry weight (mg/ plant)	Seedling health score (mg/cm)	Seedling height (cm)	Leaf stage (no.)	Dry weight (mg/ plant)	Seedling health score (mg/cm)
Seedling raising shelf	17.3	2.3*	14.7*	0.85*	16.3	2.4*	15.3*	0.9*
Conventional	17.1	3.1	21.0	1.23	15.1	3.3	23.3	1.5

* t-test : 0.05

Table 5. Missing hill percentage, rice growth at mature stage and milled rice yield as affected by seedling raising methods.

Site	Seedling raising method	Missing hill (%)	Heading date	Culm length (cm)	Panicle (no./㎡)	Spikelet (no./panicle)	Milled rice (kg/10a)
Milyang	Seedling raising shelf	3.2	Aug.16	85.2	373	90	472^{ns}
	Conventional	3.1	Aug.16	81.5	361	94	482
Sangju	Seedling raising shelf	-	Aug. 2	62.5	410	87	487^{ns}
	Conventional	-	Aug. 2	63.1	396	91	473