

Alternative Stand Establish Systems Will Require Different Recommendations for Nitrogen Management:

Young-Son Cho*, J.E. Hill, R.G. Mutters, K. Pellerin, and C.A. Greer

Department of Agronomy and Range Science, University of California, Davis, USA *National
Institute of Crop Science, RDA, Suwon-Si, Korea

Objectives

- To minimize fertilized N loss and sustain yield in each treatment
- To find the best N fertilization strategies in each cropping system
- To evaluation rice plant phenology and soil N content in each treatment

Materials and Methods

1. Sites : This experiment was conducted in California Rice Experiment Station (Biggs, California, USA).

2. Rice establishment treatments

Trt. 1 : Conventional water-seeded: Spring tillage, April 26; Permanent flood: May 14; Water-seeded: May 17

Trt. 2. Drill-seeded: May 12; Flushed: May 13 and 24; Permanent flood: June 5 (rice height 12cm)

Trt. 3. Spring tillage/Stale seedbed/Water-seeded: Spring tillage, April 26; Weed emergence flush: May 14 and 26; Permanent flood: June 2; Water-seeded: June 4

Trt. 4. No Spring tillage(No-till)/Stale seeded/Water seedbed: Weed emergence flush: May 14 26; Permanent flood: June 2; Water-seeded: June 4

Trt. 5. Weed emergence flush: May 14 and 26; Drill-seeded: June 3; Permanent flood: June 23

Table. N fertilization level and timing in 5 seedling establish treatments

N level Trt. & Timing		A	B	C	D	E
		CONV-WS	PPI	0	50	100
CONV-DS	PPI	50	0	0	50	0
	Perm Flood	100	0	50	50	100
	MT	0	0	50	50	50
WS-Stale	PPI	0	0	100	150	200
WS-Stale-NT	PPI	0	0	0	50	50
	Perm Flood	100	0	50	50	100
	MT	50	0	50	50	0
DS-Stale-NT	PPI	0	0	0	50	50
	Perm Flood	100	0	50	50	100
	MT	50	0	50	50	0

e-mail, ycho@rda.go.kr; 031-298-6687

Results and Discussion

Table. Seedling establishment numbers affected by cropping systems

Treatment	CONV-WS	CONV-DS	WS-Stale	WS-Stale-NT	DS-Stale-NT
No. of established seedlings/m ²	112±14	128±16	140±17	130±14	132±13

CONV: Conventional cropping system; WS: Wet seeding;

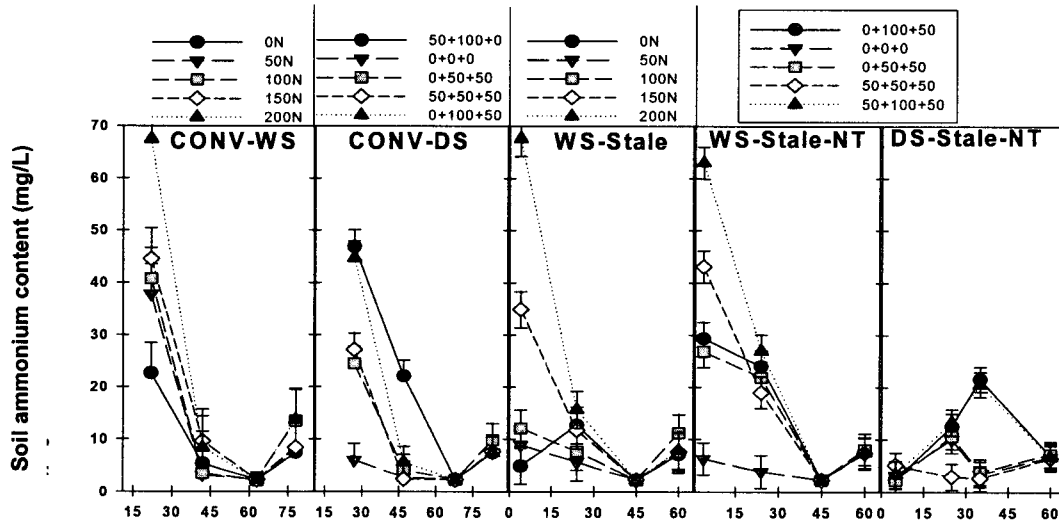


Fig. Changes of soil ammonium contents in 5 establishment treatments.

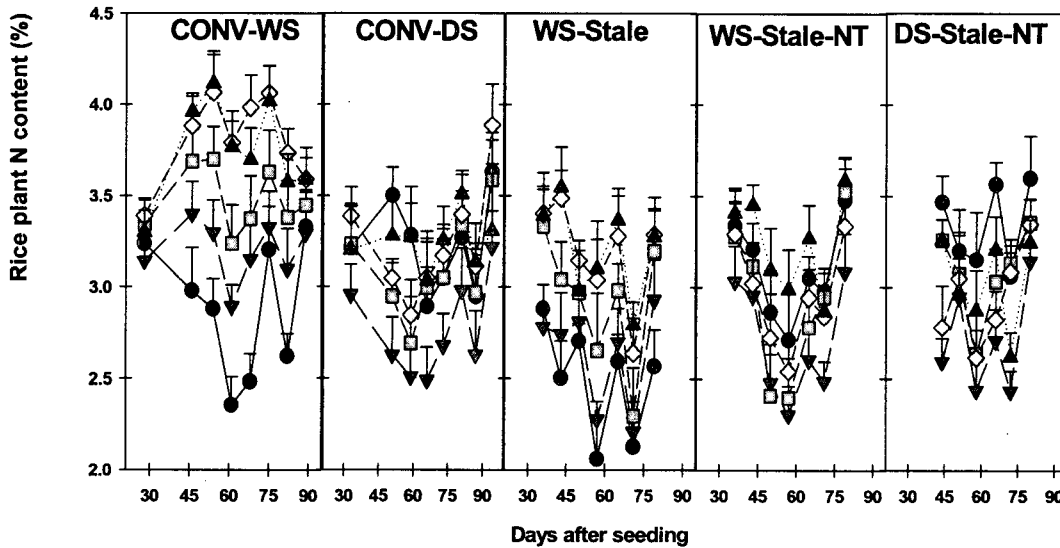


Fig. Changes of rice plant N content (%) in 5 establishment treatments.