

水稻 Combine 收穫畝의 Weedy rice 發生關聯 調査
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On Occurrence of Weedy Rice in Paddy Fields harvested by the Combine Machine

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實驗目的

Combine 收穫畝의 脫粒이 못자리 및 本畝의 耕耘方法 및 栽培樣式間 Weedy rice 發生에 미치는 影響을 調査하여 優良品種의 退化防止를 위한 基礎資料를 얻고자 함.

材料 및 方法

洛東벼 Combine 收穫畝에 三剛벼, 三剛벼 Combine 收穫畝에 洛東벼를 供試하여 栽培樣式(벼 無栽培, 湛水直播, 機械移秧, 손移秧)에 따른 Weedy rice 發生量과 耕耘時期(無耕耘, 春耕, 秋耕) 및 耕耘深度(無耕耘, 淺耕, 深耕)에 따른 Weedy rice 發芽率 등을 調査하였다.

結果 및 考察

1. Combine 收穫時 脫粒量은 10a當 三剛벼 49.5Kg, 洛東벼 27.8Kg이었으며 耕耘時期別 脫粒個體의 越冬後 發芽率은 無耕耘 16.6%, 春耕 11.5%, 秋耕 4.8%이었고 品種間에는 洛東벼의 發芽率이 顯著하게 높았다.
2. 栽培樣式別 Weedy rice 出現率은 洛東벼收穫畝의 直播栽培, 機械移秧 및 손移秧栽培에서 各各 5.7%, 0.9%, 0.4%로 三剛벼收穫畝의 0.3%, 0.3%, 0.2%보다 높은 傾向이었다.
3. Weedy rice의 穗長 및 玄米千粒重은 正常株와 差異가 없었으나 稈長과 登熟率은 減少하는 傾向이었다.
4. Weedy rice의 10a當 收量은 正常株에 비해 洛東벼 收穫畝의 湛水直播, 機械移秧 및 손移秧栽培에서 各各 5.3%, 0.3%, 0.3%이었으며, 三剛벼收穫畝에서는 各各 0.13%, 0.12%, 0.06%이었다.
5. 以上の 結果를 綜合해 볼때 品種 및 栽培樣式에 關係없이 混雜率이 採種園의 種子 合格基準인 原原種 0.01%, 原種 0.02%, 採種園 0.1%보다 顯著하게 높았으며, 特히 一般型品種의 混雜原因으로 擡頭되고 있어 今後 Weedy rice 次元에서 防除體系가 樹立되어야 될 것으로 思料된다.

Table 1. The amount of rice seed shattered by combine machine harvesting and the germination rate of their seeds after wintering.

Variety	Amount of shattering (Kg/10a)	Germination rate (%)					
		Ploughing time			Ploughing depth		
		No ploughing	Spring	Fall	No ploughing	Shallow	deep
Samgangbyeo	49.5	6.3	4.3	2.3	36.0	62.0	34.0
Nagdongbyeo	27.8	25.7	18.7	7.3	39.3	64.7	28.0

Table 2. The percentage of occurrence of weedy rice under different cultural practices of rice plant in paddy field harvested by combine machine.

Variety	Cultural practices	No. of normal rice (hills/10a)	No. of weedy rice(hills/10a)			Percentage of weedy rice		
			'89	'90	Mean	'89	'90	Mean
Samgangbyeo	Nontransplanted	23,800	1,110	2,359	1,730	4.6	9.9	7.3
	Submerged direct sowing	23,800	10	125	68	0.04	0.5	0.3
	Machine transplanting	23,800	80	141	111	0.3	0.6	0.3
	Hand transplanting	23,800	10	78	44	0.04	0.3	0.2
Nagdongbyeo	Nontransplanted	23,800	2,220	2,469	2,335	9.2	10.4	9.8
	Submerged direct sowing	23,800	1,200	1,531	1,367	5.0	6.4	5.7
	Machine transplanting	23,800	130	297	214	0.5	1.2	0.9
	Hand transplanting	23,800	60	141	101	0.2	0.6	0.4

Table 3. Comparison of grain yield between weedy rice and normal rice plant under different cultural practices in paddy field harvested by combine machine.

Variety	Cultural practices	Normal rice(Kg/10a)			Weedy rice(Kg/10a)			Weedy/Normal (%)		
		'89	'90	Mean	'89	'90	Mean	'89	'90	Mean
Samgangbyeo	Nontransplanted	552	582	567	49	140	95.0	8.9	24.1	16.5
	Submerged direct sowing	533	529	531	0.3	0.9	0.6	0.06	0.2	0.13
	Machine transplanting	551	623	587	0.7	0.9	0.8	0.13	0.1	0.12
	Hand transplanting	572	594	583	0.1	0.6	0.4	0.02	0.1	0.06
Nagdongbyeo	Nontransplanted	461	478	470	228	205	217	49.5	42.9	46.2
	Submerged direct sowing	432	473	453	23.3	23.9	23.6	5.4	5.1	5.3
	Machine transplanting	481	500	491	1.1	1.6	1.4	0.2	0.3	0.3
	Hand transplanting	469	461	465	0.9	1.5	1.2	0.2	0.3	0.3

Table 4. The frequency of occurrence and some agronomic characteristics of weedy rice in protected semi-irrigated nursery harvested by combine machine.

Item	Hill numbers per 1,000 m ²	Culm length (Cm)	Panicle length (Cm)	No. of panicles per m ²	No. of spikelets per m ²	Ripened grain ratio(%)	1000 grain wt. (g)	Yield (Kg/10a)
Normal rice(A)	23,800	85.8	20.2	413	32,237	83.7	21.0	476
Weedy rice(B)	114	90.4	21.2	215	20,414	92.6	21.2	291
B/A(%)	0.5	105	105	52	63	111	101	61.0