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Ethrel 및 TIBA 처리 시기 및 농도가 검정콩의 결협율, 수량구성요소 및 수량에 미치는 영향

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Effects of Ethrel and TIBA on Podding Rate, Yield components and Yield of Black Soybean.

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1. Objectives

The objection of this study was to evaluate the effects of the application growth stages(AGS) and the application concentrations(AC) of TIBA(2,3,5,-triiodobenzoic-acid) and Ethrel in order to increase the seed yield and prevent lodging of black soybean[*Glycine max*(L.) Merill].

2. Materials and Methods

The test variety was "Geomjeongkong 1" which was planted on 17 May. The test plant growth regulators were TIBA(2,3,5-triiodobenzoic-acid) and Ethrel. The AC of TIBA treated with 50, 100 and 150ppm, In case of the AC of Ethrel treated with 500, 1,000 and 1,500ppm. The AGS of two plant growth regulators were treated at V6, V8 and R1.

3. Results and Discussion

Podding rate with the treatments of TIBA at R1 stage was increased in all of the AC, it was increased with the AC of 50ppm TIBA at V6 and V8 stages. In case of the treatments of Ethrel, it was decreased in all of treated the AGS and the AC. The seed yield per ha was increased with the treatments of the lowest the AC of two plant growth regulators from 8 to 28 percent.

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Table 1. Comparison of podding rates, yield components and yield of black soybean treated with three different application concentrations of TIBA at three different application growth stages.

Treatment		No. of pods per plant	No. of seeds per plant	Podding rate on main stem (%)	Podding rate on branches (%)	Total podding rate (%)	100-seed weight (g)	Yield (kg/10a)
AGS♩	AC(ppm)♪							
V6	50	51.8	102.4	37.0	36.0	36.2	28.4	257
	100	44.2	87.2	36.5	35.9	36.1	28.1	189
	150	26.8	49.2	31.5	29.8	30.5	28.0	139
V8	50	48.4	95.1	36.2	35.7	36.1	28.3	241
	100	45.0	80.2	35.0	34.2	34.5	28.2	192
	150	38.1	67.2	31.7	30.9	30.8	28.1	175
R1	50	47.2	90.2	36.4	35.6	36.0	28.4	239
	100	45.5	79.4	34.9	34.1	34.5	28.2	207
	150	45.7	75.4	34.2	33.8	34.2	28.2	198
Control		45.0	81.0	35.5	31.9	33.8	28.9	222
L.S.D.(5%)	Mainplot	N.S.	N.S.	N.S.	1.23	N.S.	N.S.	N.S.
	Subplot	3.59	7.59	0.83	0.99	1.24	N.S.	17.00
	Within groups	6.21	13.14	1.39	1.72	2.15	N.S.	N.S.
	Among groups	8.64	10.82	1.33	2.62	2.09	N.S.	36.92

♩ Application growth stage, ♪ Application concentration

Table 2. Comparison of podding rates, yield components and yield of black soybean treated with three different application concentrations of Ethrel at three different application growth stages.

Treatment		No. of pods per plant	No. of seeds per plant	Podding rate on main stem (%)	Podding rate on branches (%)	Total podding rate (%)	100-seed weight (g)	Yield (kg/10a)
AGS	AC(ppm)							
V6	500	47.0	95.2	35.6	30.4	33.4	30.9	284
	1,000	44.8	77.6	33.7	30.3	32.2	30.7	192
	1,500	30.0	60.8	31.9	29.8	30.9	30.8	169
V8	500	46.2	86.0	35.3	30.5	33.0	31.0	261
	1,000	43.6	77.0	32.2	30.0	31.2	30.8	200
	1,500	32.1	63.0	31.0	27.2	29.1	31.9	181
R1	500	44.4	84.8	33.2	30.6	32.0	31.3	255
	1,000	42.0	77.0	31.7	29.6	30.7	31.3	215
	1,500	39.0	64.8	30.8	26.4	28.6	31.4	194
Control		45.0	81.0	35.5	31.9	33.8	28.9	222
L.S.D.(5%)	Mainplot	N.S.	N.S.	N.S.	0.49	N.S.	N.S.	N.S.
	Subplot	4.65	5.49	0.99	0.88	1.83	N.S.	21.97
	Within groups	8.06	9.51	1.72	3.04	3.18	N.S.	38.04
	Among groups	7.55	10.73	1.70	N.S.	2.95	N.S.	30.57