

콩 結莢率 向上을 위한 生長調整劑 處理效果

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Effect of Plant growth regulators on podding rate and other yield components in Soybean (*Glycine max* L.)

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實驗目的

현재 콩의 結莢率은 30~40% 에 머물고 있어 低段收의 主된 要因이 되고 있는바 生長調整劑 處理에 의한 結莢率向上 및 收量關聯 形質에 미치는 影響 등을 究明하여 收量增大方案을 積極的으로 摸索코자 함.

材料 및 方法

本實驗에서 播種期는 早播 (5.20)와 適播區 (6.20)를 두고 供試品種으로는 有限伸育型인 普廣콩과 無限伸育型인 長莢콩을 供試하여 Absciscic acid 外 5種의 生長調整劑를 處理하여 一般生育狀況, 收量構成要素 및 收量, 結莢率 및 蛋白質含量 등을 調查하였다.

結果 및 考察

1. 結莢率 增加效果가 가장 컸던 藥劑는 BA였고, TIBA와 ABA도 無處理에 비해 處理效果가 認定되었다.
2. 品種間에서는 無限伸育型보다 有限伸育型에서 處理效果가 높았다.
3. 處理에 따라 蛋白質 含量에 變化가 있었는데 普廣콩에서는 ABA 處理에서, 長莢콩에서는 NAA 및 TIBA에서 crude protein 含量이 조금 增加하는 傾向이었다.

Table 1. Comparison of growth characteristics of matured soybean by spraying growth regulators at RI stage.

Treatment	Lodging length (0-9)	Stem diameter (mm)	No. of nodes	No. of branches	No. of pods/plant	100 grain weight (g)	Yield (kg/10a)			
ABA	1	99.2	8.5	13.8	3.2	54ab*	36	9	26.3b	25.9a
BA	0	97.7	9.4	13.6	4.0	66a	43	9	25.9b	32.2a
Ethrel	0	92.5	8.8	13.4	4.3	42b	28	8	27.4ab	22.4a
GA ₃	0	64.7	10.5	11.0	4.4	57ab	36	11	28.7a	25.6a
NAA	1	100.8	8.5	13.2	4.1	60a	37	8	25.5b	25.1a
TIBA	0	89.6	9.4	13.3	4.3	67a	41	8	25.5b	27.6a
Control	1	98.4	8.7	14.1	3.6	55ab	34	8	25.6b	25.4a

* DMRT, .05 (Bogwang - kong, 5.20)

Table 3. Comparison of growth characteristics of matured soybean by spraying growth regulators at RI stage.

Treatment	Lodging length (0-9)	Stem diameter (mm)	No. of nodes	No. of branches	No. of pods/plant	100 grain weight (g)	Yield (kg/10a)			
ABA	1	112.4	10.9	18.3	4.8	78ab	36	9	24.3a	29.1a
BA	3	122.3	8.5	20.1	3.9	85ab	39	11	23.6a	28.9a
Ethrel	1	118.1	9.2	20.6	4.5	68b	32	10	24.2a	25.0a
GA ₃	1	114.6	10.5	20.6	4.3	97a	44	11	22.8a	24.7a
NAA	1	114.4	9.6	19.1	3.5	76ab	35	10	23.4a	26.0a
TIBA	1	115.4	9.2	18.6	3.4	84ab	38	9	23.1a	26.7a
Control	3	126.6	8.8	19.2	4.3	71ab	33	9	24.1a	26.3a

* DMRT, .05 (Janggyeong - kong, 5.20)

Table 5. Comparison of pod number by treating growth regulators

Plant growth regulator	Bogwang - kong		Janggyeong - kong		Mean	
	May 20	June 20	May 20	June 20		
ABA	54	47	51	79	45	62
BA	68	53	61	85	52	69
Ethrel	42	39	41	69	45	57
GA ₃	57	49	53	97	76	87
NAA	60	41	51	76	44	60
TIBA	67	40	54	84	43	67
Control	55	44	50	71	47	59

Table 6. comparison of 100 - grains weight by treating growth regulators

Plant growth regulator	Bogwang - kong		Janggyeong - kong		Mean	
	May 20	June 20	May 20	June 20		
ABA	26.3	23.7	25.0	24.3	22.7	23.5
BA	25.9	23.7	24.8	23.6	23.6	23.0
Ethrel	27.4	23.2	25.3	24.2	22.8	23.5
GA ₃	28.7	22.6	25.7	22.8	22.8	23.4
NAA	26.5	24.4	25.5	23.4	22.1	22.8
TIBA	25.5	24.2	24.9	23.1	24.5	23.8
Control	25.6	23.8	24.7	24.1	22.9	23.5

Table 8. Effect computation of growth regulators by comparing yield

Plant growth regulator	Bogwang - kong		Janggyeong - kong		Sum
	May 20	June 20	May 20	June 20	
ABA	1*	1	1	0	3
BA	2	1	1	1	5
Ethrel	0	-1	-1	-1	-3
GA ₃	1	-1	-1	-1	-2
NAA	1	1	0	1	3
TIBA	1	1	0	1	3
Control	-	-	-	-	-
Total	6	2	0	1	-

* score : 9kg/10a < control < 9kg/10a → 0

control > 10~50kg/10a → -1

control < 10~50kg/10a → 1

control < 50kg/10a → 2