Proposal Application Form for 2nd international vegetable soybean conference

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Title of proposed presentation Poster

The performance of main vegetable soybean varieties

Brief description of poster:
Different origion vegetable soybean varieties were sown during the summer season of 2000 in Wuhan. Their fresh pod harvest time, commercial pods ratio,commercial pod character, seed quality and main disease were investigated. Spring season type varieties showed earlier fresh pod harvest time, perfect commercial pod character, resistance to insect, susceptible to anthracnose, purple stain disease while the fall season type varieties performed late fresh pod harvest time, lower seed yield, susceptible to insec but resistant to anthracnose, purple stain diseases. The summer season type varieties adapted to the climate in Wuhan, gave more pod yield and seed yield, desirable tolerance to insect and disease, but the pod size was smaller than that of the spring type.

The Performance of Main Vegetable Soybean Varieties in China

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Introduction and Methods

11 vegetable soybean varieties were selected for evaluate trial in Wuhan, the objective is to observate the adaptability and yield potential for future extention in central China.

Complicated order design was used with one replication, 5-8 rows for each variety, plant spacing 0.1*0.4m. The experiment was carried out in the institute farm, seed was sown on June, 19th , 2000. Irrigation and weeding were conducted properly. Investigate item include: flowering time, fresh pod harvest time, harvest duration, seed harvest time, single plant pod yield, pod size, market pod ratio , 100 seed weight, major disease, insect and their severity.

Result

Agronomic performance

It took 4-6days for germination of each variety. Flowering time were different from each other, spring type soybean got flowering 30-32 DAS (days after sowing), summer type took about 46 DAS while the autumn type variety took about 70 DAS; Fresh pods could be harvested 27-45 days after flowering(DAF) for spring type soybean, 46-59DAF for the summer type soybean while it took about 60 DAF for the autumn type soybean; Harvest time could last 6-10 days for spring soybean, about 15days for summer soybean while 10 days for the autumn soybean. (table 1)

Plant pod yield ranged from 21.8-55.9g. Pod size ranged from 195-340pod/500g, compared to international standard(less than 175pod/500g), the pod size were smaller, this was due to there was drought before R6 stage and lower temperature during R6-R10. The flavor of Tai 75 and Yinmao8 tasted light sweet, was better than other varieties. 100 seed weight ranged from 16.5-31g. Seed size had positive relationship with fresh pod size. The pod yield ranged from 7.1-14 t/ha, Tai 75 gave the highest yield while Yinmao8 ranged last one.

Table 1. The agronomic character of each entries

Variety	Type	sowing harvest	Harvest Uration	Plant pod yield (g)	Pod yield (T/ha)	Pod size (num./500g)	Market Pot ratio %	soluble sugar in dry seed%	100 seed weight(g)
Yinmao 7	Spring	70	6	34.5	8.75	280	56	7.94	16.5
Tai 75	Spring	66	10	56	14	210	58.2	3.12	29
Yinmao 8	Spring	64	8	28.5	7.1	195	63.8	7.92	16.5
Yinmao 4-1	Spring	78	10	53	13.25	205	33.1	7.03	31
Yinmao7B	Spring	59	6	21.8	5.45	310	83.9	1.52	14.5
R-34	Summer	106	12	52.1	13	340	73.7	12.3	17.5
9854	Summer	106	14	50	12.5	340	58	11.14	20
84-87	Summer	103	15	47.7	11.9	255	59.45	5.95	17
DT84	Summer	101	12	40	10	310	-	9.94	16.5
Zhangziwu	Autumn	129	10	50	12.5	248	52.1	8.03	25
Jiuyuehuang	Autumn	130	10	55.9	13.9	200	71.4	10.21	22

The main problem in pod and seed production

During the R1-R6 stage, weather was dry and sparse rain, and during R6-R10 stage, temperature was lower than normal year, and rain day last long, so the insect and disease were heavily than usual. The main

insect were *Epicauta gorhami* Marseul□snout moth (*Etiella zinckenella* Treitschke), they made the bite hole on the pod and made pod deformation, therefore reduce the marketable pod ratio; the main disease were anthracnose (*Colletotrichum dematium* var.truncata)□purple stain disease (*Cercospora kikuchii* Matsum. &Tomoy), they usually made pod early aging , yield more mouldy seed and low perfect seed ratio. The spring varieties were more tolerant to insect than the summer or autumn ones while they were more susceptible to disease (table 2).

Table 2 The main pest in production

Variety	Epicauta gorhami Marseul	snout moth	Anthracnose	Purple stain disease	Perfect Seed ratio%
Yinmao 7	1*	3	5	4	0.78
Tai 75	1	2	5	4	0.43
Yinmao 8	1	3	5	4	0.85
Yinmao 4-1	1	3	5	4	0.25
Yinmao7B	1	2	5	4	0.40
R-34	3	2	3	3	0.73
9854	3	3	4	2	0.79
84-87	3	2	3	3	0.57
DT84	3	2	4	2	0.63
Zhangziwu	4	2	3	2	0.89
Jiuyuehuang	3	2	2	2	0.82

* infected degree: 1=0-20%,2=21-40%, 3=41-60%, 4=61-80%, 5=80-100%

Summary

The better varieties in this experiment were Tai75, Yinmao 8 and Yinmao7B, their pod harvest time was earlier and with good flavor, their plant had shorter and fewer branches, plant type was tight, fit for the machine harvesting, the shortcoming was their susceptibility to anthroncase, purple stain disease, seed production became more difficult, seed reproduction can be carried out in alien site or the other season.

The summer or autumn soybean gave the larger plant, more branches, higher pod yield, tolerance to disease and insect, but pod developed unevenly, they are fit for garden production. Their shortcoming was smaller pod size, lower 2-seed or 3-seed pod ratio, poor flavor. The better performance varieties were 84-87 and Jiuyuehuang.

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