

A NEW VARIETY OF SOYBEAN (*Glycine max* (L.) Merrill) FOR TAMIL NADU

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Soybean culture UGM 20 maturing in 85 days with erect, medium stature, photo-insensitive, possessing high yield potential [1600-1700 kg/ha under irrigation and 1085 kg/ha under rainfed condition] was released as Co. 1 for general cultivation. It is resistant to yellow mosaic virus disease, stemfly and podborer. It has high protein, oil with minerals and vitamins, low in carbohydrate. It can be cultivated in all the seasons.

Soybean is an important protein and oil crop in the world. It is a wonder crop, popularly called 'chindrella crop', 'Golden Miracle bean', 'Humble bean' and 'Chinese cow'. It is a temperate crop indigenous to Northern China. Almost 5000 years ago it was one of the sacred grains of China. Soybean is generally recognised as a short day plant and flowers only within a range of photo periods shorter than the critical photo period which changes with latitude and season. Adoption of a variety is restricted to a narrow range of latitude and invariably to a specific season. This crop has been given prominence recently because of its broad utility for both human and animal nutrition, soil fertility, industrial usefulness and geographical adaptability.

Soybean got introduced into India almost at the same time as in the United States. The per capita availability of vegetable proteins and animal proteins in India are only 45 gm and 5.2 gm as against the requirement of 54 gm and 10 gm respectively.

Soybean is an excellent source of both protein (40-45%) and oil (20-25%) and has vast multiplicity of uses as pulses, oilseed, vegetarian meat, milk and also in antibiotic industry.

Protein from Soybean is the cheapest. The lysin content is as high as 6% of the total protein. Soybean contains sufficient amount of thiamine and riboflavin, calcium iron and phosphorus. It has low carbohydrate (20.9%) than other foodgrains. It is an energy rich grain legume (432 K Cal). Soybean is advocated for use by patients suffering from diabetes, nervous disorder, intestinal disorder, colony disease and hypoglycaemia.

In India Soybean is cultivated in low hills of Kumaon and Gargaon regions of the Himalayas, foot hill of this tract and some scattered pockets in Central India for ages. The varieties grown were of longer duration, viny growth habit with small and fleshy shattering pods, black seeds and very low yields. These were primarily used

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as pulses by local population and the plants fed to cattle as feed. Now the cultivation in India is gaining importance with the development of industries in the States of Madhya Pradesh and Uttar Pradesh. The other states encouraging cultivation are Karnataka, Maharashtra, Gujarat, Bihar and Himachal Pradesh.

The first attempt made in 1915 by R. C. Wood, the then Principal of the Agricultural College and Research Institute, Coimbatore, to introduce this crop in Tamil Nadu was a failure because the seeds had not germinated well, the crop had not set pods/seeds properly and the varieties were photo-sensitive. Intensive breeding programme initiated at Tamil Nadu Agricultural University, Coimbatore, from 1975 and strengthened by the establishment of All India Coordinated Soybean Scheme since 1977 handling germplasm materials and breeding materials has yielded useful results.

The screening of over 700 germplasm materials, hybridisation and selection in various stages, evalua-

tion of entries from other sources and Coordinated trials resulted in the identification of UGM 20, a selection from a Thailand variety.

The culture UGM 20 was found to be productive in all the seasons with good germination of seeds. It was tested at Coimbatore for about ten years. It was compared with culture 2120 from Taiwan since 1978 in yield trials. The culture UGM 20 registered a mean yield of 2260 kg/ha under irrigation as against 947 kg for culture 2120, the per cent increase being 139. Under rainfed conditions UGM 20 gave grain yield of 1085 kg/ha. Culture UGM 20 gave grain yield of 1928 kg/ha at Agricultural Research Station, Tindivanam. In all India Coordinated Trials conducted in 1977-78 kharif season, the culture UGM 20 gave a mean yield of 1644 kg/ha. In the Adaptive Research trials, as well as trials conducted in farmers' holdings during 1978 and 1979 kharif season, the culture UGM 20 recorded a mean grain yield of 1125 kg and 1241 kg/ha respectively (Table 1).

Table 1: Mean Performance of UGM 20 Soybean

Particulars	No. of trials		Yield grain kg/ha	
	Irrigated	Rainfed	Irrigated	Rainfed
1. a) In TNAU Main campus	14	6	2260	1085
b) In the University Research Station	1	--	1928	--
c) Coordinated trials	8	--	1644	--
d) Adaptive Research Trials	3	--	1125	--
e) Farmers' holdings	11	--	1241	--
	Total		1640	1085

