VB-3 is a spontaneous mutant selection from the variety Type 9. It matures in 65 to 70 days. It is an erect dwarf with an average height of 25 to 30 cm. It is resistant to yellow mosaic virus disease (Table 4) and suitable for *kharif* season. Stem pink pigmented and flowers are yellow in colour. Pods are glabrous with 5 to 6 seeds and 4-5cm long. Seeds are black with prominent white hilum. The average grain yield is about 1000 kg/ha suited to both irrigated and rainfed conditions. Field tolerant to pod borer damage. This selection was highly acceptable to the farmers and consumers. Being earlier, high yielding, resistant to yellow mosaic virus disease and wider adaptability to various climatic zones and hence released as VB-3 black gram variety for commercial cultivation in India.

(Received: August 1995 Revised : September 1995)

Madras Agric. J., 82(12): 621-623 December 1995
https://doi.org/10.29321/MAJ.10.A01279

ADT 1: A NEW SOYBEAN VARIETY FOR CAUVERY DELTA RICE - FALLOW CULTIVATION

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ABSTRACT

A culture UGM 33, is a pureline selection from 'Hill'. It was high yielding under Cauvery delta rice - fallow cultivation and released as ADT 1. It possesses erect, compact and medium plant stature (70 cm), with cream coloured seeds, 2 to 3 in a pod with velvetty hairs. The duration is 85 - 90 days. Main yield is 1274 kg/ ha. Seeds contain 30% protein and 29% oil and no beany flavour.

KEY WORDS : ADT1 - Soybean Variety, Cauvery Delta, Rice - Fallow

In the recent past, soybean was introduced for cultivation in rice-fallow of Cauvery delta zone. It was also found to be suitable for summer cultivation. With introduction of Co1 variety, the area under rice-fallow soybean has greatly increased. At present the coverage is about 10-12 thousand ha. The yield potential of Co1 is about 900 - 1000 kg/ha. Hence, there is an impreative need to develop high yielding soybean variety better than Co1 for rice- fallow land area.

MATERIALS AND METHODS

The continued evaluation and screening of various soybean genotypes from 1985 to 1989, at the Tamil Nadu Rice Research Institute, Aduthurai has resulted in the identification of a high yielding culture UGM 33. It is a pure line selection from variety Hill

RESULTS AND DISCUSSION

The UGM 33, registered increased yield over Co 1 by 57 per cent in 80 days in 1985, by 22 per cent in 82 days in 1986 and by 51 per cent in 86 days in 1987 (Table 1) During 1988, it recorded a grain yield of 2226 kg/ha in 87 days. In 1989 rice - fallow season, UGM 33 has recorded 683 kg/ha grain yield in 86 days with an increase of 19 per cent yield over Co1. Thus the culture has recorded an average yield of 1274 kg/ha as against 1063 kg/ha recorded by Co1 registering 20 per cent increased yield in the trials conducted at the Tamil Nadu Rice Research Institute, Aduthurai from 1985 to 1989. (Table 1). In the multilocation trial at the Agricultural Research Station, Pattukkottai during

Table 1. Performance of UGM 33 soybean at Tamil Nadu Rice Research Institute, Aduthurai under rice - fallow conditions (grain yield in kg/ha)

Year	UGM 33	Co.1	Per cent increase over Co.1
1985	536 (81)	342 (82)	57
1986	1542 (82)	1260 (83)	22
1987	1381 (86)	914 (86)	51
1988	2226 (87)	2226 (87)	0
1989	683 (86)	572 (87)	19
Mean	1274	1063	20

(Figures in parentheses indicate crop duration in days)

Table 2. Performance of UGM 33 soybean in the farmers' holdings in Thanjavur district under rice-fallow conditions (1989)

Location	Grain yield (kg/ha)		Duration in days	Per cent increase over Co.1
	UGM 33	Co.1		
Umayalpuram	1100	650	97	69
Thensarukkai	800	900	88	-11
Veerappudaiyanpatti	1175	1005	80	17
Soorakkottai	1500	1200	91	25
Tiruvaiyaru	1685	1500	89	12
Tiruvizhanallur	1000	850	89	18
Thayanapuram	380	595	88	-36
Deemingalam	675	815	94	-17
Prinji Moolai Thalainayaru	900	720	91	25
Desingarajapuram	1183	930	87	27
Pavithramanickam	1218	1005	93	21
Radnananallur	1005	845	88	19
Chickavalam	1120	950	91	18
Kottur	1060	900	95	18
MEAN	1057	919	90	15
CV (%)	29.4	23.8	4.5	

Table 3. Biochemical properties of UGM 33 soybean

Variety	Protein (%)	Oil (%)
UGM 33	30.01	29.00
Co.1	26.31	28.70

1989, UGM 33 has recorded 1520 kg/ha grain yield registering 6 per cent increased yield over Co1 (1440 kg/ha)

Based on these performances, the culture UGM 33 was advanced to on-farm trials (OFT) along with Co1. In the OFT conducted in the farmers holdings in 14 places of Thanjavur district during 1989, it has out yielded Co1 in 11 locations,

Table 4. Organoleptic test results for the acceptability of UGM 33 soybean

Character	UGM 33	Co.1
Per cent of water uptake for soaking	30	25
Cooked beans		
Colour	Half White	Half White
Appearance	Good	Good
Flavour	Very good	Very good
Texture	Very good	Very good
Tests	Very good	Very good
Milk		
Colour	Very good	Very good
Appearance	Very good	Very good
Flavour	No beany flavour	Very good
Tests	Good	Good
Acceptability	Good	Good

recording a mean grain yield of 1057 kg/ha as against 919 kg/ha by Co1 (Table 2).

This culture is suitable for cultivation as a relay crop in rice- fallow fields during January to April in Cauvery delta zone. It withstood drought due to its deep root system. Pods are non-shattering. It can be sown in the rice stubbles by dibbling adapting a spacing of 30cm x 10cm in optimum moisture level. No field preparation is required. Seed rate is 40 kg/ha. It can also be cultivated under irrigated conditions during summer (April July). During rice cropping in *kuruvai/thaladi/samba*, it can be sown on the field bunds for seed multiplication purposes. The grain of UGM 33 contains 30 per cent protein and 29 per cent oil (Table 3). The cooked beans and milk prepared from UGM 33 are having acceptable qualities without flavour (Table 4).

It was field - tolerant to leaf miner and leaf webber.

Morphological description of the variety

Plant height : 65 - 70 cm

Distinguishing morphological features :

Habit : Erect, branching, tall, determinate.

Pigmentation : Green

Branches	:	3-5
Number of nodes	:	15
Stem colour	:	Green
Leaf	:	Green in colour, trifoliate with regular margin, length and breadth of side leaflets is 10.0 and 6.2 cm and that of central leaflet is 11.5 and 6.2 cm respectively. Pedicel is 7-12 cm long, dorsally grooved, ventrally ridged with pubescence.
Inflorescence	:	Axillary and terminal raceme.
Flower	:	Tiny, 6 cm long, vielet coloured, standard petal, first pink in colour and later turns into violet, white wing and dark purple keel petals, stamens diadelphous (9+1) anthers cream, calyx green pubescent and persistent.
Number of pods per plant	:	103
Pods	:	2-3 seeded, 5 cm long, with yellowish brown velvetty hairs.
Number of clusters per plant	:	51
Seeds		Medium sized, cream coloured, white eyed with dark brown hilum.
100 seed weight (mean)	:	13.6 gms. (irrigated bund crop.) 10.0 gms. (Rice-fallow condition)
c) Days to 50% flowering	:	42
Days to maturity	:	85-90 (Seed to Seed)

The culture UGM 33 being a high yielder is an alternative to the presently grown Co1 for cultivation in rice fallows of Cauvery delta. Due to increased production the agrobased soy-industries will get a fillip. The farmers will get increased income.

Hence, UGM 33 has been released as ADTI during 1989 by the Tamil Nadu State Variety Release Committee.

ACKNOWLEDGEMENT

The authors duely acknowledge the help and guidance rendered by Dr.A. Abdul Kareem. the then Director, Tamil Nadu Rice Research Institute, Aduthurai Dr.S.R. Sree Rangasamy, the then Director, School of Genetics, Tamil Nadu Agricultural University, and Drs. M.Balasubramanian and V.Sivasubramanian, the retired professors with gratitude.

(Received July 1995 Revised : September 1995)

Madras Agric. J., 82(12): 623-625 December 1995

CO-3: A NEW SUNFLOWER VARIETY FOR TAMIL NADU

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ABSTRACT

TNAU SUF 10 Sunflower is a gamma irradiated mutant of Co2. It is an open-pollinated variety maturing in 90 days and outyielded standard varieties Co2 and Morden. The plants are tall with greater head diameter. The seed contains 38.3 percent oil. It is highly suitable for the districts in western zone, north western zone and southern zones of Tamil Nadu for *kharif* (rainfed) and *rabi*. It was released as Co3 sunflower for TamilNadu to replace Co2 and Morden varieties.

KEY WORDS : Sunflower - Variety - Adaptive Research Trial

Sunflower (*Helianthus annuus* L.) is an important oilseed crop and it is gaining importance because of its low cholesterol content and lesser cost of cultivation compared to other oilseed crops.