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.

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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.

Table 1. Performance of TNAU SUF-10 (CO 3) at Coimbatore (1990-91)

Entries	*Rabi* 90-91		Summer 90-91		*Kharif* '91		Average	
	Yield (kg/ha)	% on Co 2	Yield (kg/ha)	% on Co 2	Yield (kg/ha)	% on Co 2	Yield (kg/ha)	% on Co 2
TNAU SUF-10	1755	131.1	848	174.6	1074	154.6	1225	146.00
Co2	1338	100.0	486	100.0	694	100.0	839	100.00

Table 2. Performance of TNAU SUF-10 (CO 3) in the multilocation trials-*kharif* '92

Entry	Seed yield (kg/ha)						% on Co 2	% on Morden
	Coimbatore	Killikulam	Srivilliputhur	Paiyur	Kovilpatti	Mean		
TNAU SUF-10	2282	1078	1278	953	1438	1406	119.1	125.9
Co2	1865	903	889	906	1344	1181	100.0	105.7
Morden	1730	830	769	914	1344	1117	94.6	100.0

Table 3. Performance of TNAU SUF-10 (CO 3) in adaptive research trial

District	Mean seed yield (kg/ha)		
	TNAU SUF10	Co2	Morden
Coimbatore (8)	1333	1155	1107
Periyar (10)	1241	1088	972
Salem (2)	1222	1111	1139
Dharmapuri (2)	743	767	816
North Arcot Ambedkar (2)	813	825	788
Dindigul Anna (5)	964	916	1035
Kamarajar (3)	1047	972	903
Tirunelveli Kattabomman (5)	1141	1026	1005
Mean	1144	1024	1001
% increase over Co2	12		
% increase over Morden	14		

Figures in parentheses indicate number of locations

In Tamil Nadu, the crop is raised in an area of 57,000 hectares with a productivity of 790 kg per hectare and the area is steadily increasing . There is a need to evolve high yielding types better than the existing varieties Co2 and Morden, to increase the overall oilseed production in Tamil Nadu. With this objective, attempts were made to evolve open - pollinated varieties through mutation breeding and the results are presented.

MATERIALS AND METHODS

Seeds of Co2 sunflower were irradiated with 5KR gamma rays and a total of 55 mutant progenies were evaluated from 1987 to 1990 and an elite open pollinated mutant was identified as high yielder and was designated as TNAU SUF-10. This culture was evaluated in station trials at the Department of Oilseeds, multilocation trials in different research stations and adaptive research trials in farmers' holding in different districts and the results are presented.

RESULTS AND DISCUSSIONS

TNAU SUF-10 was tested at Department of Oilseeds for three seasons namely *rabi* 1991, summer '91 and *kharif* '91 and it recorded a mean yield of 1225 kg/ha with 46 percent increase in yield over Co2 (Table 1). Based on the superior performance, it was advanced to multilocation trials and tested at Coimbatore, Killikulam, Srivilliputhur, Paiyur and Kovilpatti centres during *kharif* '92. In these trials, the culture registered a mean yield of 1406 kg/ha with 19 and 26 percent increase in yield over Co2 and Morden respectively (Table .2)

Table 4. Performance of Sunflower variety Co3 under *kharif, rabi* and summer seasons

Culture	Seed yield (kg/ha)				Oil yield (kg/ha)			
	Kharif	*Rabi*	Summer	Mean	*Kharif*	*Rabi*	Summer	Mean
TNAU SUF10	1251	1390	1053	1231	479	532	403	471
Co2	1010	1148	790	983	378	429	295	367
Morden	982	992	1018	997	360	364	374	366
EC 68414	891	-	-	891	323	-	-	323
% increase over								
Co2	23.9	21.1	33.3	25.2	26.7	24.0	36.6	28.3
Morden	27.4	40.1	3.4	23.5	33.1	46.2	7.8	28.7
EC 68414	40.4	-	-	38.2	48.3	-	-	45.8

Table 5. Data on oilcontent and other ancillary characters

Name of the entry	Plant height (cm)	Head diameter (cm)	100 seed weight (gm)	Oil-content (%)	Duration (days)
TNAU SUF10	168.3	15.9	5.5	38.3	88
Morden	99.8	14.4	4.9	36.7	79
Co2	135.0	15.0	4.5	37.4	87

ANNEXURE I Morphological character of sunflower variety Co3

Description of variety : Plant height : 145-175
Medium tall
Number of leaves/plant 30-33
Girth of stem - 1.82 cm
Diameter of the Capitulum 13 to 16 cm
100 Seed weight - 5 to 6g
Seed colour - Dark grey
Seed shape - Oval and linear

In the 37 adaptive research trials conducted in the farmer's holdings at different districts during rabi and summer 93-94, it gave a mean yield of 1144 kg/ha with 12 and 14 percent increased yields over Co2 and Morden respectively. (Table 3) Considering the overall performance over locations and seasons, it gave a mean yield of 1231 kg/ha with 25 and 23 percent increased yield over Co2 and Morden respectively (Table 4). In terms of oil yield also, the culture recorded 471 kg/ha with 28 and 29 percent increase over Co2 and Morden respectively (Table 4)

TNAU -SUF-10 comes up well in the districts of Periyar, Coimbatore, Salem, Tirunelveli, Kattabomman in *kharif* (rainfed) and *rabi* (irrigated) seasons. This variety is moderately resistant to jassids, ashweevil and head borer and diseases like alternaria and rust.

The duration of the culture is equal to that of Co2 (90 days). The plants are tall with greater head diameter and bold seeds. The seeds of the culture contains 38.3 percent of oil (Table 5) and it is acceptable both by farmers and trade. The morophological features of this veriety are furnished in Annexure-I.

In view of the superior performance, TNAU SUF-10 was released as Co3 during 1995 as Pongal gift to farmers.

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CO 2 : A NEW SHORT DURATION SOYBEAN VARIETY

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ABSTRACT

An improved short duration (75-80 days), dwarf, determinate, compact, non shattering Co2 soybean variety has been released for general cultivation in Tamil Nadu. It was from the culture UGM 52, a hybrid derivative of UGM 21 x JS 335 and recorded a seed yield of 1341 Kg/ha as against 1235 Kg/ha by Co 1.

KEY WORDS : Co2, Soybean, Variety

Soybean *(Glycine max)* is the only pulse cum oilseed crop providing the highest protein (40-45%) and vegetable oil (20%). It has got the potentiality to provide roughly two times more seed and protein yield than other pulses. It has got other uses like pulse, oilseed, vegetarian meat, milk, vegetable and also in the antibiotic industry. Though it is primarily confined to the temperate zone, evolution of varieties suited to tropics and subtropics had made its cultivation universal. In Tamil Nadu, local farmers generally cultivate food crops such as sorghum, pearl millet with the onset