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

Table 1. Performance of the culture UGM 52 under different population levels

Population	Grain yield kg/ha	
	UGM 52	Co 1
0.6 m/ha (30 x 5 cm)	1352	995
0.4 m/ha (30 x 7.5 cm)	1390	1074
0.3 m/ha (30 x 10 cm)	1217	1186

of monsoon rains. After the harvest, the land is usually left fallow for several months. For intercropping with sugarcane, coconut, banana and for rice fallows, short duration pulse varieties are highly essential to utilise the available moisture resources. To satisfy the above needs, a new short duration Co 2 soybean variety was developed through hybridisation technique.

MATERIALS AND METHODS

Cross pollination was effected between UGM 21 x JS 335 during summer 1987 and the hybrid derivative was isolated during *kharif* 1988 and was named as culture UGM 52. The detailed pedigree chart of UGM 52 is given here under.

Year	Season	Generation
1987	Summer	Crossing programme
1987	*Kharif*	F1
1987	*Rabi*	F2
1988	Summer	F3
1988	*Kharif*	F4 (Replicated Row Yield Trial)
1989-1991		1989-1991University Varietal Trials
1992		Multilocation Trials
1993		Adaptive Research Trials.

The culture UGM 52 matured in 75-80 days and was released during 1995 as Co 2.

Table 2. Mean performance of soybean culture UGM 52

Details of Trials	No. of Trials	Grain yield kg/ha	
		UGM 52	Co 1
Station trials 1988-1991	4	1407	1208
Multilocation trials 1992	7	1397	1248
Adaptive Research trials 1993-94			
Kharif	27	1359	1365
Rabi	27	1240	1277
Summer	34	1075	1117
Mean		1341	1235
% increase over Co1		8.65	
Per day productivity in kg		16.8	13.7

Table 3. Morphological description of UGM 52

Characters	UGM 52
Quantitative traits	
Plant height	30-40 cm
Seed to 50% flowering	30-40 days
Seed to seed	75-80 days
Number of nodes per plant	9-10
Number of pods per plant	50-70
Number of seeds per pod	2-3
100 seed weight	13-14 g
Qualitative traits	
Stem colour	green
Flower colour	Pink to purple
Seed colour	Cream to yellow
Leaf	Simple, trifoliate dark green
Seeds	Non shattering
Plant	Compact, determinate and non lodging
Agronomic characters	
Season	June-July and December-January (Photo insensitive)
Seed rate	60-70 kg/ha
Spacing	30 x 7.5 cm
Manures	FYM 10 T/ha
	N 40 kg/ha
	P 80 kg/ha
	K 40 kg/ha

RESULTS AND DISCUSSION

Soybean is highly a self pollinated crop. The extend of cross pollination does not exceed more than one per cent. With the help of the available germplasm sources creation of new recombinants is very difficult. Hence, for the past one decade the existing Co 1, a medium duration variety could not be replaced inspite of the sincere efforts made in this important crop. However, through artificial hybridization, with great difficulties and with careful selection, UGM 52 culture could be successfully identified. In view of its shorter duration, the yield level could be compensated by adopting closer spacing *i.e*, 30 x 7.5 cm. instead of the normal recommended spacing of 30 x 10 cm. The performance of this culture under different

Table 4. Oil and protein analysis in UGM 52

Entries	Oil content %	Protein content %
UGM 52	24.8	38.46
Co 1	23.0	39.28

population levels is presented in Table 1. The overall performance of this variety compared with Co 1 under various trials is presented in Table 2. The description of Co 2 is detailed in Table -3.

By virtue of the following special features, this new culture UGM 52 is released as Co 2 for general cultivation.

It matured earlier (75-80 days) and gave on average yield of 1341 kg/ha as against 1235 Kg/ha by Co 1. The per day productivity on UGM 52 was 16.76 kg compared to 13.72 Kg/ha in Co.1

It is a dwarf determinate and compact plant type.

Pods are non shattering, non lodging and photoinsensitive.

The leaves are dark green with long petiole which would help to increase the photosynthetic activity.

It was shown field tolerance to yellow mosaic virus disease and the pests like leaf miner.

It has got high oil content (24.8%) and protein (39.28%) as against Co 1 with 23% oil and 38.46% protein contents (Table 4)

It can be raised as pure crop, intercrop and rice fallow.

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EVALUATION OF INSECTICIDES FOR CONTROL OF PAINTEDBUG ON TARAMIRA

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ABSTRACT

A field experiment was conducted during *rabi* 1986-87 with RTM-2 variety of rocket *(Eruca sativa* Miller) to evaluate the efficacy of seven insecticides against painted bug, *Bagrada hilaris* Burm. The sprays of malathion, 0.05 per cent, dimethoate 0.03 per cent and monocrotophos 0.036 per cent were found effective for control of this pest.

KEY WORDS : Taramira, Insecticides, Bug, Control

Rapeseed and mustard are important oilseed crops of Northern India. This group of crops include *raya, toria, sarson, gobi sarson* and *taramira.* Taramira (rocket) is mostly grown under conserved moisture conditions in about 1.7 lakh ha in Rajasthan. It is reported to be relatively free from damage of insect pests. But is was found severely damaged by painted bug, *Bagrada hilaris* Burm at both pod formation and seedling stages, besides aphids and cutworm at Mandor research farm. The adult bugs and their nymphs suck sap from the leaves, inflorescence and pods of the plant. The infested crop develops withtish blotchy spots or give a blighted or burnt up look. Several workers have worked out the efficacy of different insecticides against painted bug on sarson (Srivastava and Dixit, 1977: Sarup *et al.,* 1971 a), cauliflower (Gupta *et al.,* 1977), pearlmillet (Sandhu *et al.,* 1974) and under laboratory conditions (Sarup *et al.,* 1971 b; Krishnan Kumar and Ratan Lal, 1966; Pradhan and Bhatia, 1952). But no specific work on control of painted bug on rocket *(Eruca sativa* Miller) is reported. Therefore, present investigation was undertaken.

MATERIALS AND METHODS

A field experiment was laid out with RTM-2 variety of *E.sativa* to work out the efficacy of differentinsecticides for control of painted bug in a randomised block design at Agricultural Research Farm, Mandor, Jodhpur during *rabi* 1886-87. Each treatment was replicated three times and the size of the plot was 4 x 3 m. The row to row distance and plant to plant distance was kept at 30 cm and 15 cm, respectively. The treatments were