



Latest Development in Soybean Breeding



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Soybean Varieties Developed in India

176 Soybean Varieties Developed for six agroclimatic zones of India

Resistance/Tolerance to YMV, anthracnose, charcoal rot, rust

Early maturity to suit soybean-potato/onion/garlic-wheat crop rotation

Food Grade Soybean varieties with null Kti, null lox, high oleic acid.

India's first drought tolerant variety NRC 136



Varieties for Madhya Pradesh

S. No.	Variety	Notification	Maturity
1	NRC 150	2023	Early
2	JS 21-72	2023	Early
3	NRC 152	2023	Early
4	NRC 157	2023	Early
5	NRC 131	2023	Early
6	NRC 130	2021	Early
7	NRC 138	2021	Early
8	JS 20-34	2014	Early
9	JS 95-60	2007	Early
10	JS 21-72	2023	Medium
11	RVS 76	2023	Medium
12	RVSM 2011-35	2021	Medium
13	NRC 142	2021	Medium
14	MACS 1520	2021	Medium
15	AMS 100-39	2021	Medium
16	RSC 10-46	2021	Medium

Varieties for Madhya Pradesh

S. No.	Variety	Notification	Maturity
17	JS 20-94	2019	Medium
18	JS 20-116	2019	Medium
19	JS 20-98	2018	Medium
20	NRC 127	2018	Medium
21	Raj Soya-24 (RVS 2002-4)	2017	Medium
22	Raj Soya-18 (Pragya)	2017	Medium
23	NRC 86	2015	Medium
24	JS 20-29	2014	Medium
25	Pratap Soya 45	2013	Medium
26	Him Palam Soya	2023	Late
27	NRC 136	2023	Late
28	MACS -1520	2021	Late
29	RSC-1046	2021	Late
30	JS 20-116	2019	Late
31	JS 20-98	2018	Late
32	JS 20-69	2016	Late
33	RVS 2001-4	2014	Late

Early Maturing Variety for Madhya Pradesh



NRC 157

Suitability	For both rainfed and irrigated conditions
Salient features	Provides a wider sowing window and can be sown up to 15 July with little yield penalty
	Early maturing : 92 days
	Yield : 1650 kg/ha
	Good plant height suitable for mechanical harvesting
Morphological features	Semi determinate, dark green leaves with leaf blistering, purple flower, Pubescence absent on plant and pods, brown hilum
Reaction to insects and diseases	Resistant to Alternaria Leaf Spot, Bacterial Pustules and moderate resistance to Target Leaf Spot.
Potential replacement of	JS 20-34, JS 95-60, JS 93-05
Notification No.	S.O. 1056(E) 06.03.2023

Central Zone Early Maturing Variety

NRC150



Suitability	Suitable for Rainfed conditions
Salient features	Developed through MAS, free from Lipoxygenase-2
	Early maturing : 90.6 days
	Yield : 1757.5 kg /ha
	Amenable to mechanical harvesting
Morphological features	Semi determinate growth, white flower, green leaves, brown colour pubescence on plant and pod, black hilum.
Reaction to insects and diseases	HR reaction to Charcoal rot at the hot spots across three years and MR reaction to YMD.
	MR reaction against defoliators.
Potential replacement	JS 95-60, JS 93-05
Notification No.	S.O. 1056(E) 06.03.2023

Central Zone Early Maturing Variety

NRC130

Suitability	For both rainfed and irrigated conditions
Salient features	Presence of photo insensitive allele e3.
	Early maturing : 92 days
	Yield : 1451 kg /ha
	Good plant height (47.4 cm) Amenable to mechanical harvesting
Reaction to insects and diseases	MR to AR to Charcoal Rot MR to Pod Bligh
	Resistant to stem fly, girdle beetle and defoliators
Potential replacement of	JS 95-60, JS 93-05
Notification No.	S.O. 500(E) 29.01.2021



Madhya Pradesh Early Maturing Variety

NRC131



Suitability	For both rainfed and irrigated conditions
Salient features	Photo insensitive
	Early maturing : 93 days
	Yield : 1451 kg /ha
	Good plant height (57 cm) suitable to mechanical harvesting
Morphological features	Erect and determinate, thick dark green leaves with blistering on upper surface, pubescence absent on plant and pod, purple flower, yellow hilum, round bold seed.
Reaction to insects and diseases	Resistant to Charcoal rot MR to Target Leaf Spot
	Slight antixenosis reaction against <i>Spodoptera litura</i> Resistant to stem fly, girdle beetle and defoliators
Potential replacement of	JS 20-34, JS 95-60, JS 93-05
Notification No.	S.O. 1056(E) 06.03.2023

Central Zone Early Maturing Variety

NRC138



NRC 138

Suitability	For both rainfed and irrigated conditions
Salient features	Early maturing : 93 days
	Yield : 1789 kg /ha
Morphological features	Determinate, pointed ovate leaf, white flower, brown pod, dark brown pubescence, brown hilum
Reaction to insects and diseases	Resistant to YMV, Moderately resistant to PB(ct), TLS, Susceptible to CR, RAB and MLS
Potential replacement of	JS 95-60, JS 93-05
Notification No.	S.O. 2986 (E) 20.07. 2021

Central Zone Early Maturing Variety

NRC 152

- KTI free
- Lipoxygenase 2 free
- Early maturing – 90 days
- Recommended for Central Zone
- S.O. 1056(E) 06.03.2023



Early Maturing Old Varieties Popular in Madhya Pradesh State



JS 95-60 (2007)

- Maturity: **90** Days
- Yield :1800 Kg/Ha
- Purple Flower
- Brown Pubescence
- 100 SW 13.5g
- Grey hilum
- Oil 19.5%,
- Protein 38.5%
- R to root rot



JS 20-34 (2014)

- Maturity: 87 days
- Yield: 20 Q/ha
- Oil: 20%
- Protein: 41%
- White Flower,
- Black hilum
- Glabrous pods
- 100 SW: 12 g
- R to CR

Central Zone Medium Maturing Varieties

**JS 21-72
(CZ)**



Multiple resistance against biotic stresses like yellow mosaic virus, charcoal rot, bacterial pustules, leaf spots

Average yield: 2140 kg/ha

Medium duration variety-

**Himso 1689
(CZ)**



- **Average yield: 2078 kg/ha**
- **Moderately resistant to charcoal rot, anthracnose, target leaf spot and RAB**

Central Zone Medium Maturing Variety

NRC142 (Food Grade)



Suitability	For rainfed and irrigated condition
Salient features	Null LOX 2 and Null KTi,
	Medium maturing : 97 days
	Yield : 2200 kg /ha
	Good plant height suitable to mechanical harvesting
Morphological features	Purple flower, black hilum, determinate, dark ovate green leaf, brown pubescence, purple flower, black hilum, oval seeds
Reaction to insects and diseases	Resistant to YMV, MR to RAB and TLS
	R-HY/S-HY reaction to pest complex
Potential replacement of	JS 95-60, JS 93-05
Notification No.	S.O. 2986 (E) 20.07. 2021

Central Zone Medium Maturing Varieties

JS 20-29

- Maturity: 93-96 days
- Yield: 2125
- S.O 1146(E) 24.04.2014

NRC 86

- Maturity: 95-97 days
- Yield: 2128
- S.O. 268(E) 28.01.2015

RVSM 2011-35

- Maturity: 98 days
- Yield: 2200
- S.O. 2986 (E) 20.07. 2021

Raj Soya-24 (RVS 2002-4)

- Maturity: 96 days
- Yield: **1905**
- S.O. 1007(E) 30.03.2017

Central Zone Medium Maturing Varieties

AMS 100-39 (PDKV Amba)

Maturity- 97 days

- Yield: 2087kg/ha
- S.O. 2986 (E) 20.07. 2021

Raj Soya-18 (Pragya)

- Maturity- 92 days
- Yield: **1911.78**
- S.O. 2805(E) 25.08.2017

Pratap Soya 45 (RKS 45)

- 95-98 days
- Yield: 3000
- Rajasthan
- S.O. 2815 19.09.2013

First drought Tolerant Soybean variety For Madhya Pradesh & Eastern Zone

NRC136



Suitability	For both rainfed and irrigated conditions
Salient features	Drought resistant variety
	Late maturity : 107 days
	Yield : 1700 kg/ha
	Semi-determinate with Tall plant height (67 cm), White flowers, pointed ovate green leaf, tawny pubescence on pods, spherical yellow seed with dark brown hilum. Seed size small
Reaction to insects and diseases	Highly Resistant to Indian Bud Blight.
	Moderately Resistant to defoliators.

Soybean Varieties For Food Usages

NRC 127

- Kunitz Trypsin Inhibitor is anti-nutritional factor.
- varieties are null Kti
- Null Kti
- S.O. 6318 (E) 26.12.2018

NRC 142 and NRC 152

- Kti and Lox 2 free
- Lipoxygenase 2 is the major contributor of beany flavour in soy milk.
- Double Null
- S.O. 2986 (E) 20.07. 2021
- S.O. 1056(E) 06.03.2023

NRC 147

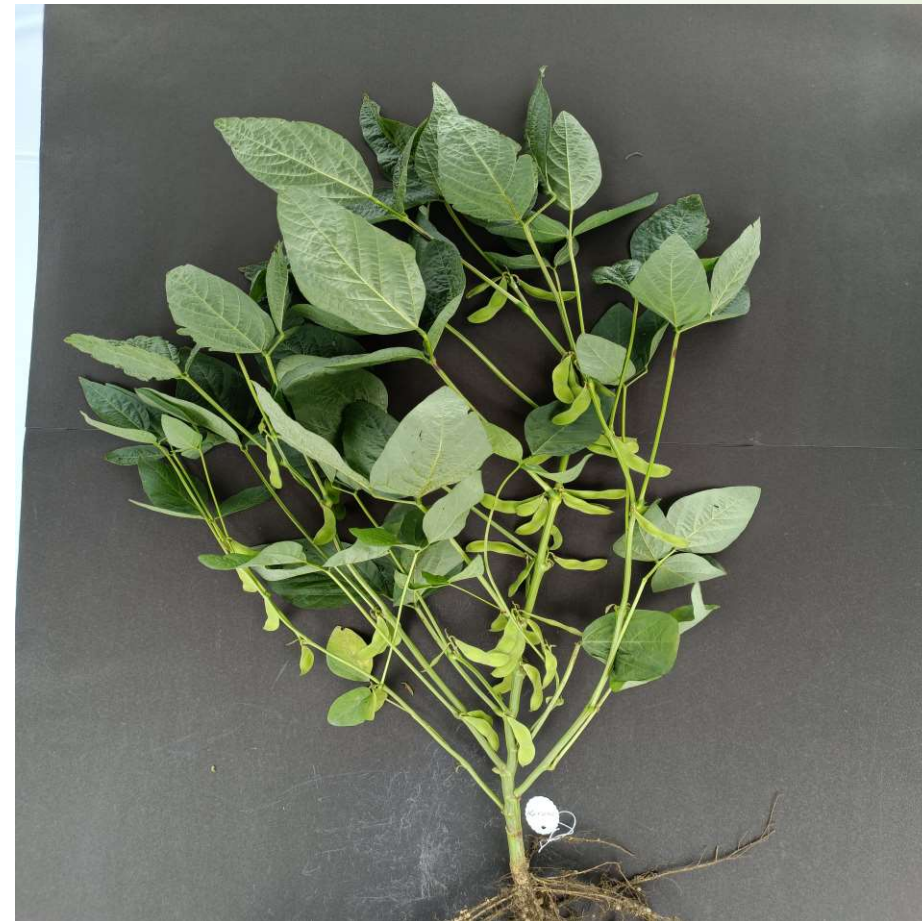
- Oleic acid improves the shelf life of oil
- Normal oleic acid content 22%
- NRC 147 has 42% oleic acid
- S.O. 500(E) 29.01.2021



First Vegetable Type Soybean for Southern Zone

Karune (KBVS 1) (Vegetable soybean)

- Maturity: Pod harvest: 68 days
- Yield: 10640 Kg/ha green pods
- S.O. 2986 (E) 20.07. 2021
- Green seed weight 77.8 g, dry seed weight 30-35 g, 4.8 to 6.5 sucrose content, semi-determinate, puckering leaf surface, oval green leaves, white flowers, light green oval seed, white hilum
- MS to Rust and MS to PSS, R-HY reaction to pest complex



Central Zone Late Maturing Varieties

Jawahar Soybean 20-98 (JS 20-98)

- Maturity: 96-101 days
- Yield: **2094**
- S.O. 1379(E)/ 27.03.2018

Jawahar Soybean 20-116 (JS 20-116)

- Maturity: 97.2 days, 100.9 days, 100.7 days
- Yield: 2122
- S.O. 3220(E) 05.09.2019

NRC 127 (Food Grade)

- Maturity: 102 days
- Yield: **1807**
- S.O. 6318 (E)26.12.2018

Central Zone Late Maturing Varieties

JS 20-69

- Maturity: 107 days
- Yield: 1852
- S.O. 2238(E) 29.06.2016
- Resistant to Yellow Mosaic Virus (YMV), Charcoal Rot (CR), Bacterial Pustules (BP), Alternaria Leaf Spot (ALS), Pod blight (PB) Indian bud blight (IBB), Target Leaf Spot (TLS).

Jawahar Soybean 20-94 (JS 20-94)

- Maturity: 94-101 days
- Yield: 2104
- S.O. 3220(E) 05.09.2019

Him Palam Soya-1 Himso-1689

- S.O. 1056(E) 06.03.2023

Central Zone Late Maturing Varieties

MACS 1520

- Maturity: 98-120 days
- Yield: 2207
- S.O. 500(E) 29.01.2021

RSC 10-46

- Maturity: 102 days
- Yield: 1947
- S.O. 500(E) 29.01.2021
- Central Zone , Eastern zone

Him Palam Soya-1 Himso-1689

- S.O. 1056(E) 06.03.2023

RVS 76

- Maturity: 101 days
- Yield: 2066
- S.O. 2986 (E) 20.07. 2021

AMS-MB-5-18 (Suvarn Soya)

- Maturity: 100 days
- Yield: 2044
- MR to CR

Eastern Zone Varieties

NRC 128

- Maturity: 110days
- Yield:2269 (NPZ), 1871(EZ)
- S.O. 500(E) 29.01.2021



NRC 132 (Food Grade)

- Maturity: 104.6(EZ), 98.55(SZ) days
- Yield:2288(SZ), 1652(EZ)
- S.O. 500(E) 29.01.2021



Eastern Zone Varieties

NRCSL 1

Maturity: 107 days

Yield:1706

S.O. 500(E) 29.01.2021

NRC 136

- Maturity: 107 days
- Yield:1700
- S.O. 500(E) 29.01.2021



MACS 1460

- Maturity: 97(EZ), 89(SZ) days
- Yield:2253(EZ), 2085 (SZ)
- S.O. 500(E) 29.01.2021

Kota Soya-1 (RKS 113)

- Maturity: 100-102 days
- Yield:1893
- S.O. 1379(E)/ 27.03.2018

NRC 147

- Maturity: 96 days
- Yield:2362
- S.O. 500(E) 29.01.2021

Eastern Zone Varieties

RSC 11-07

- Maturity: 102(EZ), 97(SZ) days
- Yield: 1916, 2515(SZ)
- S.O. 500(E) 29.01.2021
- Eastern & Southern zone

RSC 10-52

Maturity: 101 days

- Yield: 2054
- S.O. 4065(E)/ 31.08.2022
- Eastern Zone



Chhattisgarh Soybean- 1 (CG SOYA-1)

- Maturity- 95-100 days
- Yield: 2445 kg/ha
- S.O. 1379(E)/ 27.03.2018
- Resistant to Indian bud blight, Rhizoctonia aerial blight, Myrothecium leaf spot and bacterial pustule disease. Moderately resistant to pod blight (*Collototricum truncatum*).
- Chhattisgarh

Eastern Zone Varieties

AMS 2014-1 (PDKV Purva)

Maturity- 105 days

- Yield: 1804 kg/ha
- MR to Pb, HR to IBB, MS to YMV

BAUS 40

Maturity- 115-120 days

- Yield: 2500 kg/ha
- Tolerant to pod blight, bacterial blight, target leaf spot, aerial web blight, FLS & CLS. Moderately resistant to defoliators, pod borers, stem fly across the zone. It is also found resistant to Bihar hairy caterpillar and leaf roller in Jharkhand
- S.O. 8(E)/ 24.12.2021
- Jharkhand

RSC 10-71

- S.O. 4065(E)/ 31.08.2022
- Eastern Zone

Birsa Soybean-4 (BAUS-96)

- S.O. 4065(E)/ 31.08.2022
- Jharkhand

Chhattisgarh Soya 11-15

- S.O. 4065(E)/ 31.08.2022
- Chhattisgarh

Northern Plain Zone Varieties

SL 979

- Maturity: 127 days.
- Yield: 2335
- S.O. 99(E) 06.01.2020
- North Plain Zone

SL 955

- Maturity: 126 days
- Yield: 2201
- S.O. 99(E) 06.01.2020
- Northern Plain Zone

SL 1074

Maturity- 124 days

- Yield: 1917 kg/ha
- Tolerant to YMV
- 2021

PS 1572 (PS 26)

- Maturity: 120 days
- Yield: 1926
- S.O. 99(E) 06.01.2020
- North Plain Zone

Pant Soya 24 (PS 1477)

- Maturity: 113 days
- Yield: 2560
- S.O. 2805(E) 25.08.2017
- North Plain Zone

Northern Plain Zone Varieties

PS 1572 (PS 26)

- Maturity: 120 days
- Yield: 1926
- S.O. 99(E) 06.01.2020
- North Plain Zone

SL 958

- Maturity: 142 days
- Yield: 2282
- S.O. 112(E) 12.01.2016
- Resistant to YMV and SMV
- Punjab

SL 1028

Maturity- 124 days

- Yield: 2196 kg/ha
- MR to YMV
- 2021

Pant Soya 24

(PS 1477)

- Maturity: 113 days
- Yield: 2560
- S.O. 2805(E) 25.08.2017
- North Plain Zone

Pusa 12 (DS 12-13)

- Maturity: 124-131 days.
- Yield: 2286
- S.O. 1228(E)07.05.2015
- North Plain Zone

Northern Plain Zone Variety

Pusa Soybean 06

Maturity- 124 days

Yield: 2100 kg/ha

Resistant to YMV, RAB, BP, moderately resistant to stem fly, defoliators

S.O. 2986 (E) 20th July 2021

NCR Delhi



Southern Zone

MACS-1188

- Maturity: 101 days
- Yield: 2475
- **S.O.2817 19.09.2013**
- Southern Zone

KDS 344 (Phule Agrani)

- Maturity: 94 days
- Yield:2555
- S.O. 268(E) 28.01.2015
- Southern Zone

Pooja (MAUS 2)

- Maturity: 100-105 days
 - Yield:2721
 - **S.O 1146(E) 24.04.2014**
- Southern zone & Karnataka

MACS 1281

- Maturity: 96 days
- Yield:2519
- S.O. 2238(E) 29.06.2016
- Southern Zone

KDS 726 (Phule Sangam)

Maturity- 96-97 days

- Yield: 2442 kg/ha
- **S.O. 1498 (E)01.04.2019**
- Moderately resistance to Stem fly and defoliators.

Southern Zone

Phule Durva (KDS 992)

- Maturity: 101 days
- Yield: 2658
- S.O. 8(E)/ 24.12.2021

DSb. 23

- Maturity: 95 days
- Yield: 2440
- S.O. 1379(E)/ 27.03.2018
- Moderately resistant to defoliators, stemfly and pod borer.
- Highly resistant to rust

DSb 34

- Maturity: 95 days
- Yield: 2655
- S.O. 500(E) 29.01.2021
- Rust resistant, MR to pod blight, HR to PSS, MR to defoliators, stem fly, girdle beetle and pod borer.

Basara

- Maturity- 105-115 days
- Yield: 2663 kg/ha
- S.O. 6318 (E) 26.12.2018
- Telangana

Southern Zone

MAUS 612

- Maturity- 91-95 days
- Yield: 2531kg/ha
- S.O. 1379(E)/ 27.03.2018
- Maharashtra and South Zone

MAUS 162

- Maturity- 95-98 days
- Yield: 2000
- Maharashtra
- S.O. 1919(E) 30.07.2014
- Tolerant against charcoal rot, Rhizoctonia root rot and Rhizoctonia aerial blight

MAUS 725

- S.O. 1056(E) 06.03.2023
- Maharashtra

KS 103

- Maturity- 91-95 days
- Yield: **2537** kg/ha
- S.O. 1379(E)/ 27.03.2018
- Field rust resistance and resistance to pest complex.

DSb-21

- Maturity- 90-95 days
- Yield: **2807**
- Karnataka, South Zone
- S.O. 1919(E) 30.07.2014
- S.O. 1228(E)
- 07.05.2015
- Resistant to rust

Southern Zone

AMS 1001

- Maturity- 95-100 days
- Yield: **2173** kg/ha
- S.O. 3220(E) 05.09.2019
- Resistant to root rot, YMV, Alternaria leaf spot

KDS 753

- Maturity- SZ: 95, NEHZ: 107, EZ: 97 days
- Yield: SZ: 2362, EZ: 2053, NEHZ: 1697 kg/ha
- S.O.3482(E) / 07.10.2020
- NEHZ, EZ, SZ

DSb 28

- Maturity- 95 days
- Yield: 2317 kg/ha
- S.O. 99(E) 06.01.2020
- HR to rust,
- Moderately resistant to defoliators, stemfly and pod borer

AISb 50

- Maturity- 99-104 days
- Resistant to Pod blight (ct), Frog eye leaf spot, Alternaria leaf spot and moderate resistant to charcoal rot. Moderately resistant to defoliators and stem girdler,
- S.O. 8(E)/ 24.12.2021
- Telengana

Varieties for North Hill Zone

Pant Soybean-19 (PS 1368)

- Maturity: 117-125 days
- Yield: 2121
- Uttarakhand
- S.O. 652(E) 10.04.2013

VL Bhat 201

- Maturity: 117 days
- Yield: 1642
- Uttarakhand
- S.O. 3540(E)
22.11.2016

VLS 99 (NHZ)



- Average yield: 2359 kg/ha.
- Promising against frog eye leaf spot, pod blight diseases as well as defoliators, aphids and white flies under field conditions

VL Soya 77

- Maturity: 112-127 days
- Yield: 1970
- Uttarakhand
- S.O. 3540(E) 22.11.2016

Pant Soya 21 (PS 1480)

- Maturity: 123-126 days
- Yield: 2057
- Uttarakhand
- S.O. 2805(E) 25.08.2017

Varieties for North Hill Zone

Pant Soya 23 (PS 1521)

- Maturity: 112-115 days
- Yield: 1915
- Uttarakhand
- S.O. 2805(E) 25.08.2017

Shalimar Soybean-1 (AGR/538)

Maturity- 140-145 days

- Yield: 2030 kg/ha
- S.O. 3220(E) 05.09.2019
- Jammu & Kashmir
- Resistant to root rot and rust and moderately resistant to yellow mosaic virus as well as *Alternaria* blight

VL Soya 89 (VLS 89)

- Maturity: 116 days
- Yield: 2324
- Himachal Pradesh and Uttarakhand
- S.O.1498 (E) 01.04.2019

VL Bhat 202

- Maturity: 112 days
- Yield: 1596
- Uttarakhand
- S.O. No. 99(E) 6th January 2020

VL Soya 59

- Maturity: 135 days
- Yield: **2562.2**
- North Hill Zone
- S.O. No. 99(E) 6th January 2020

Varieties for North Hill Zone

Him Palam Hara Soya 1 (Himso 1685)

- Yield: 2346 kg/ha
- highly resistant against frogeye leaf spot (*Cercospora sojina*), pod blight (*Colletotrichum truncatum*), bacterial pustule (*Xanthomonas axonopodis* pv. *glycines*) and brown spot (*Septoria glycines*) diseases
- S.O. 8(E)/ 24.12.2021
- Himachal Pradesh

PS 1556

Maturity- 120 days

- Yield: 2287 kg/ha
- S.O. 99(E) 06.01.2020
- Northern Hill Zone
- MS to FLS, resistant to YMV and BP

Shalimar Soybean 2 (SKUA-WSB-101)

- S.O. 1056(E) 06.03.2023
- Jammu and Kashmir

Varieties for North Eastern Hill Zone

MACS 1407

- Maturity- 104 days
- Yield: 2101 kg/ha
- Tolerant to YMV
- S.O. 500(E) 29.01.2021
- MR to rust, HR to Pb. R to Girdle Beetle, Leaf Miner, Leaf Roller and moderate resistance to Stem Fly, Defoliators, Aphids and White Fly.
- North Eastern Zone

DSb 32

- Maturity: 102 days
- Yield:1917
- S.O. 99(E) 06.01.2020
- North Eastern Hill Zone

Umiam Soybean 1 (RCS 1-9)

- S.O. 1056(E) 06.03.2023
- Meghalaya

Identified Varieties 2023

7 new varieties of soybean were identified in VIC meeting held on 16th May 2023

- JS 22-12 : Central Zone
- JS 22-16 : Central Zone
- NRC 181: Food Grade and Early for Central Zone
- NRC 165: Early Maturity for Central Zone
- NRC 188: Vegetable type for Central zone
- RSC 11-35: Eastern Zone
- PS 1670 : North Plain Zone

Thank You