Crop Science

1. Name of the technology: Rice var. Zinco Rice – MS (Bio-fortified variety)

Source of technology: Indira Gandhi Agricultural University, Raipur

Year of notification: 2019

Description of the technology: Rich in Zinc (27.4 ppm) suitable for early & medium sown condition under rainfed and irrigated condition, resistant to lodging and shattering. Moderately tolerance to leaf blast, brown spot, sheath rot and rice tungro disease.

a) Duration in days: 121-140 days

b) Suitable land type: Irrigated lowland

c) Grain type: slender

d) Plant height: 100-105 cm, Yield: 5.0 t/ha

2. Name of the technology: Rice var. Rice ADT 57

Source of technology: Tamil Nadu Agricultural University, Coimbatore

Year of notification: 2022

Description of the technology: It is a derivative of ADT 45 x ACK 03002, it is a medium slender rice with maturity in 115 days. The average yield of the culture is 6500 kg/ha. It has milling of 69% and head rice recovery of 60%.

3. **Name of the technology:** Rice TKM 15

Source of technology: Tamil Nadu Agricultural University, Coimbatore

Year of notification: 2022

Description of the technology: This variety is derived from TKM 12 x IET 21620. It is a short duration drought tolerant variety with 115-120 days. The average yield of the culture is 4200 kg/ha. It has milling of 68% and head rice recovery of 63%. The variety is suitable for direct sowing semi dry condition during north east monsoon in north and southern districts. It is a medium slender rice with cooking quality. The physiological parameters for drought tolerance and water stress are observed in this variety.

4. Name of the technology : Green gram var. VBN 5

Source of technology/variety: TNAU, Coimbatore

Year of notification : 2022

Description of the technology/ variety: It is a derivative of VBN (Gg)2 x ML 1451 and with 70 – 75 days duration. The average yield of the culture is 870 kg/ha. It is resistant to yellow mosaic virus. The variety is suitable for kharif, rabi and summer

5. Name of the technology : Toria "CAU-Toria 1"

Source of technology : DOR, CAU, Imphal, Manipur

Year of notification : 2019

Description of the technology: CAU-Toria 1 is a promising toria line developed through composite breeding programme with base variety M-27 and TS-36 and maintained by mass selection. This promising line attains an average plant height of 80 cm and maturing early (100 days duration) with average seed yield of about 1327 kg ha-1 (range from 649 to 2985 depending on soil fertility and crop management). The seed contains 42% oil with total oil output of 557 kg ha-^{1}. It is tolerant to white rust but moderately susceptible to alternaria blight disease.

6. Name of the technolog : CAUS 105(IET27496) of paddy

Source of technology : CPGS-AS (CAU, Imphal), Umiam, Meghalaya

Year of notification : 2019

Description of the technology: CAUS 105 (IET27496) is a high yielding improved pure line derived from a cross between Shahsarang and Priya. The line carries PsTol1 gene, hence is suitable for phosphorus deficient acidic soil conditions. The line is suitable under low fertilizer input and organic cultivation practices. The line possesses resistance to leaf and neck blast. Duration- 139 days, Average Rice Yield 4.2 t ha^{-1}.

7. Name of the technology/variety: CAUS 107(IET28210) of paddy

Source of technology/variety : CPGS-AS (CAU, Imphal), Umiam, Meghalaya

Year of notification : 2020

Description of the technology: CAUS 107 (IET28210) is a high yielding improved pure line derived from a cross between Shahsarang and CAUR-1. It has semi-glutinous endosperm. The line has high zinc content (28 ppm) in unpolished grain and is suitable for phosphorus deficient acidic soil conditions. The line is suitable under low fertilizer input and organic cultivation practices. The line possesses resistance to leaf and neck blast. Duration- 126 days, Average Rice Yield 4.3 t ha^{-1}.

8. Name of the technology : Wheat Variety: DBW222 (Karan Narendra)

Source of technology : ICAR-Indian Institute of Wheat and Barley Research, Karnal

Year of notification : 2020

Description of the technology: Strong stem strength and lodging tolerance variety. Resistant for stripe and leaf rust; Highly resistant to Karnal bunt (9.1%) and loose smut (4.9%). Recommended for irrigated timely sown conditions of Punjab, Haryana, Delhi, Rajasthan (except Kota and Udaipur divisions) and Western U.P. (except Jhansi division), Jammu and Kathua dist of Jammu and parts of Himachal Pradesh and Uttarakhand (Tarai region). Plant Height: 103cm; Flowering: 95 days (Range: 89-103 days) Maturity: 143 days (Range: 139-150 days). Average Yield: 61.3 q/ha Potential Yield: 82.1q/ha. Good Chapati-making score (7.5), High bread loaf volume (648), Better bread quality (8.24) and a biscuit spread factor of 8.45cm

9. Name of the technology : Wheat Variety: DBW187 (Karan Vandana)

Source of technology : ICAR-Indian Institute of Wheat and Barley Research, Karnal

Year of notification : 2019

Description of the technology: Karan Vandana (DBW 187) is the latest wheat variety released for irrigated timely sown conditions of North Eastern Plains Zones comprising of Eastern Uttar Pradesh, Bihar, Jharkhand, Assam and West Bengal. High input responsive wheat variety for early sowing. Resistant for stripe and leaf rust, highly resistant to wheat blast, moderate resistance to Karnal bunt and tolerance to loose smut. Plant Height: 105cm; Flowering: 99 days (Range: 94-103 days) Maturity: 148 days (Range: 139-157 days). Average Yield: 61.3 q/ha Potential Yield: 96.6 q/ha. High 1000 grain wt (44g), Good Chapati-making score (7.7), High bread loaf volume (648), High protein content (11.6 %).

10. Name of the technology : Wheat Variety: DBW316 (Karan Prema)

Source of technology : ICAR-Indian Institute of Wheat and Barley Research, Karnal

Year of notification : 2023

Description of the technology: Karan Prema, is a new high yielding bread wheat variety released for cultivation under late shown conditions in North Eastern plain Zones which covers Eastern Uttar Pradesh, Bihar, Jharkhand, Orissa, West Bengal, Assam and plains of North Eastern states. DBW316 is tolerant to terminal heat stress, wheat rusts, wheat blust, and follicular blights. Good Chapati-making, High protein content (13.2 %), High bread loaf volume (593 ml). Recorded potential yield level of 68 q/ha with av. Yield of 41 q/ha under late sown conditions.

11. Name of the technology/variety:

Wheat Variety: DBW371 (Karan Vrinda)

Source of technology/variety: ICAR-Indian Institute of Wheat and Barley Research, Karnal

Year of notification : 2023

Description of the technology/ variety: Karan Vrinda, is a new wheat variety released for cultivation under **early shown conditions** covering states of Punjab, Haryana, Delhi, Rajasthan (except Kota and Udaipur divisions) and Western U.P. (except Jhansi division), Jammu and Kathua dist of Jammu and parts of Himachal Pradesh and Uttarakhand (Tarai region). The average yield of DBW371 is 75.9 q/ha and in being high input responsive genotype it performs better under early sown condition. Bolder grains (46gTKW), lowest phenol content (2.8), high protein content (12.2%) high grain Fe (45ppm) and Zn (40 ppm) content.

12. Name of the technology : Optimum sowing time and integrated nutrient management for enhancing the yield of local glutinous maize

Source of the technology : CAU, Imphal, Manipur

Year of notification : 2019

Description of the technology: Best sowing time for glutinous maize in Manipur is 20th March to 9th April. Apply 75% recommended nitrogen through urea and 25% nitrogen through farm yard manure gives for getting highest yield in glutinous maize. Highest grain yield was recorded when crop sown on 9th April (27.49 q ha^{-1}) with 75% recommended nitrogen through urea and 25% nitrogen through farm yard manure (32.90 q ha^{-1}).

Fig. 1 Local glutinous maize in the field

Fig. 2 Harvested local glutinous maize

13. Name of the technology : Short duration paddy variety CAU-R3 (Mangalphou)

Source of the technology : CAU, Imphal, Manipur

Year of notification : 2020

Description of variety:

a) An early rice variety as contingency crop for pre-kharif and late- kharif conditions

b) Specific areas of its adaptation/ adoption: Irrigated/rainfed valley areas with an altitude from 750 to 950 m above MSL where rabi crop is to be grown.

c) Recommended ecology: Irrigated/Rainfed valley areas with medium to high soil fertility, pre-kharif to late-kharif sowing with high density planting.

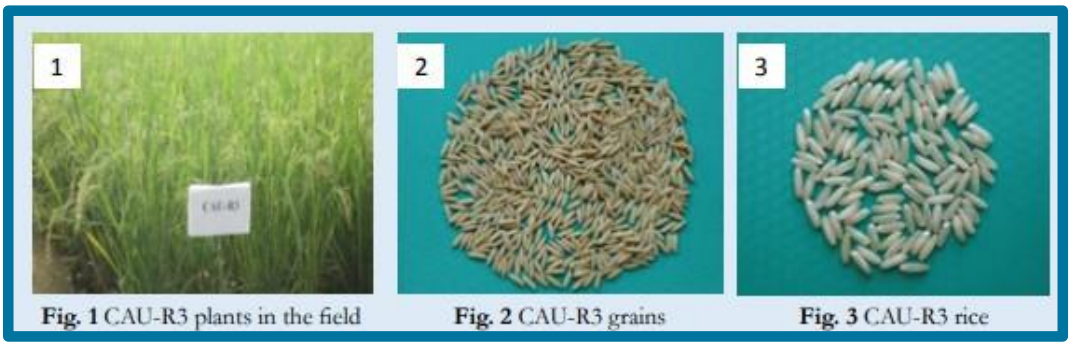

Fig. 1 CAU-R3 plants in the field **Fig. 2** CAU-R3 grains **Fig. 3** CAU-R3 rice

14. Name of the technology : Semi-deep-water paddy CAU-R4 (Eenotphou)

Source of the technology : CAU, Imphal, Manipur

Year of notification : 2020

Description of the technology: CAU-R4 (Eenotphou) evolved from the cross between *Moirangphou khokngangbi x Leimaphou*. The variety matures within 145 days with good grain quality of Manipur's local preference with a milled rice recovery of about 68 percent. The variety withstands most of the diseases and insect pest of rice to a considerable extent. CAU-R4 performed well as a main paddy crop under low lying semi deep-water rice ecosystems.

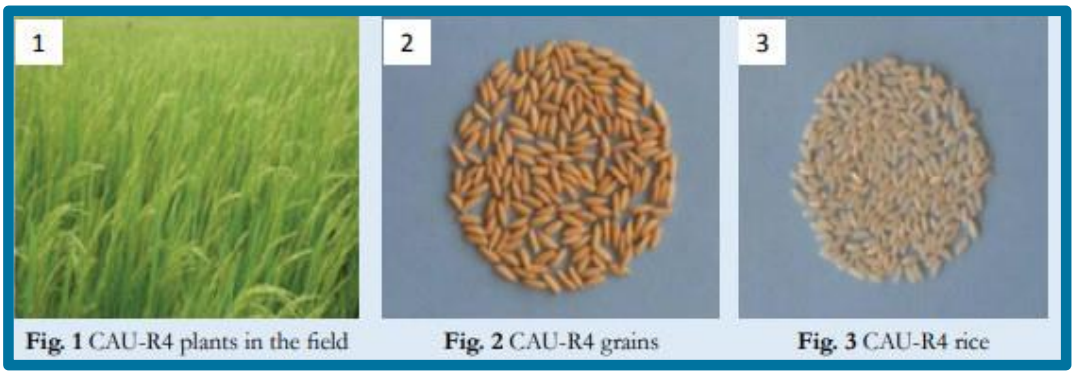

Fig. 1 CAU-R4 plants in the field **Fig. 2** CAU-R4 grains **Fig. 3** CAU-R4 rice

15. Name of the technology : Upland paddy variety CAU-R2 (Tomthinphou)

Source of the technology : CAU, Imphal, Manipur

Year of notification : 2020

Description of the technology: The variety is an early maturing type (95-100 days) suitable for rainfed upland and jhum ecosystem condition with high organic matter content. Yield improvement (%) over Local check: 40% - 50%. Levels of fertilizer application**:** High performance under low applied fertilizer level of 60: 40: 30 kg ha^{-1}.

Average rice yield: 2.0 t ha^{-1}

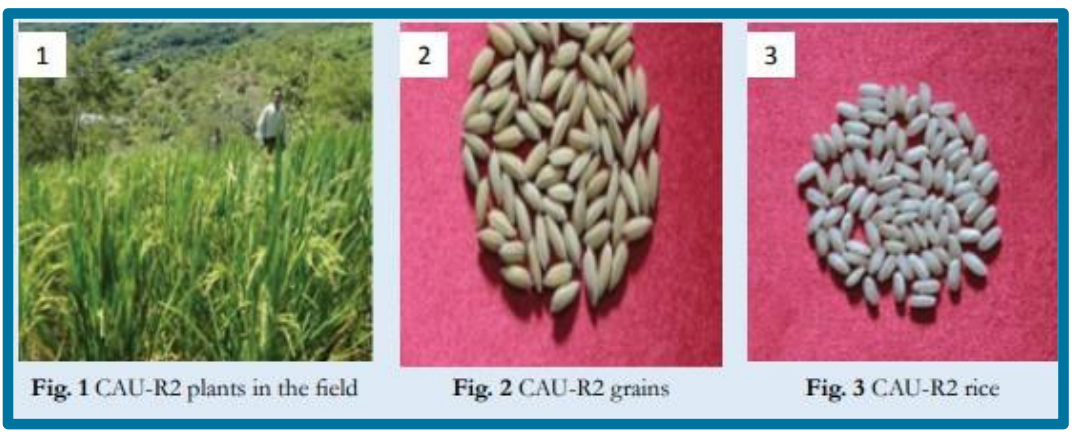

Fig. 1 CAU-R2 plants in the field **Fig. 2** CAU-R2 grains **Fig. 3** CAU-R2 rice

16. Name of the technology : Promising line of groundnut "CAU-GS1"

Source of the technology : CAU, Imphal, Manipur

Year of notification : 2020

Description of the technology: CAU-GS1 is a promising line with high yield potential under good management conditions. The genotype has an average kernel yield of 3.2 t ha^{-1} with plant height ranging 45-50 cm and maturing in 130 days. The variety has approximately 45% oil content and is resistant to late leaf spot diseases. The leaves of the variety are green at maturity which can be used as fodder.

17. Name of the technology/variety:

Paddy var. AAU-TTB-Dhan41 *(Labanya)* Diabetic friendly purple rice

Source of technology/variety: Assam Agricultural University, Titabor, Assam

Year of notification : 2022

Description of the technology/ variety: High yielding black rice line, AAU-TTB-Dhan41 (Labanya) developed from a cross involving Bahadur/ Manikimadhuri/ /Black Rice, have similar nutritional quality of the traditional black rice. The variety is high yielder (4.5-5.0 t/ha) with a lower Glycemic Index (GI) and aroma. It can be cooked like normal rice. The amylose content of Labanya is around 18 percent and head rice recovery is around 60 percent. The Labanya is having higher antioxidants and flavonoids, phenolic compounds, essential amino acids and minerals, protein, fibre content compared to normal rice.

18. Name of the technology/variety: Wheat var. VL Gehun 3004

Source of technology/variety : VPKS, Almora

Year of notification : 2019

Description of the technology/ variety: The variety developed by VPKAS, Almora is suitable for Valleys and Plains

19. Name of the technology : Wheat var. VL Gehun 2014

Source of technology : VPKAS, Almora

Year of notification : 2019

Description of the technology: Suitable for valleys/Plains

20. Name of the technology : Wheat var. VL Gehun 2015

Source of technology : VPKS, Almora

Year of notification : 2021

Description of the technology: Suitable for hills

21. Name of the technology : Paddy var. VL Dhan 88

Source of technology : VPKS, Almora

Year of notification : 2021

Description of the technology: suitable hor hills

22. Name of the technology : Paddy var. VL Sikkim Dhan 4

Source of technology : VPKS, Almora

Year of notification : 2021

Description of the technology: Suitable for Sikkim

23. Name of the technology : Paddy var. VL Dhan 69

Source of technology : VPKS, Almora

Year of notification : 2021

Description of the technology: Suitable for Hills of Uttarakhand, Sikkim and J&K

24. Name of the technology : Paddy var. VL Dhan 210

Source of technology/variety: VPKS, Almora

Year of notification : 2021

Description of the technology/ variety: Suitable for Hills

25. Name of the technology/variety: Maize var. VL Maize Hybrid 57 (FH 3754)

Source of technology/variety: VPKS, Almora

Year of notification : 2019

Description of the technology/ variety: Suitable for Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura

26. Name of the technology/variety: Maize var. VL Sweet Corn Hybrid-2 (FSCH 75)

Source of technology/variety: VPKS, Almora

Year of notification : 2019

Description of the technology/ variety: Suitable for Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura (North Eastern Hills Region).

27. Name of the technology/variety: Finger millet var.VL Mandua 379

Source of technology/variety:
VPKS, Almora

Year of notification : 2018

Description of the technology/ variety: Suitable for NE States

28. Name of the technology/variety: Maize var. VL Mandua 380

Source of technology/variety: VPKS, Almora

Year of notification : 2019

Description of the technology/ variety: Suitable for Uttarakhand

29. Name of the technology/variety: Field Pea var. VL Matar 61 (VL 61)

Source of technology/variety: VPKS, Almora

Year of notification : 2020

Description of the technology/ variety: Suitable for Uttarakhand

30. Name of the technology/variety: Lentil var. VL Masoor 148 (VL 148)

Source of technology/variety:
VPKS, Almora

Year of notification: 2020

Description of the technology/ variety: Suitable for Himachal Pradesh, Jammu & Kashmir, Uttarakhand, Manipur and Tripura

31. Name of the technology/variety: Soybean var. VL Soya 89

Source of technology/variety: VPKS, Almora

Year of notification : 2019

Description of the technology/ variety: Suitable for hills

32. Name of the technology/variety: Garden Pea var. VL Sabji Matar 14 (VP 1018)

Source of technology/variety: VPKS, Almora

Year of notification: 2021

Description of the technology/ variety: Suitable for Uttarakhand

33. Name of the technology/variety: Garden Pea var. VL Sabji Matar 14 (VP 1018)

Source of technology/variety: VPKS, Almora

Year of notification 2021

Description of the technology/ variety: Suitable for Uttarakhand

34. Name of the technology/variety: Garden Pea var. VL Sabji Matar 14 (VP 1018)

Source of technology/variety: VPKS, Almora

Year of notification 2021

Description of the technology/ variety: Suitable for Uttarakhand

35. Name of the technology/variety: Promising line of Toria "CAU-Toria 1"

Source of the technology/variety: CAU, Imphal, Manipur

Year of notification: 2019

Description of the technology/ variety: CAU-Toria 1 is a promising toria line developed through composite breeding programme with base variety M-27 and TS-36 and maintained by mass selection. This promising line attains an average plant height of 80 cm and maturing early (100 day's duration) with average seed yield of about 1327 kg ha-1 (range from 649 to 2985 depending on soil fertility and crop management). The seed contains 42% oil with total oil output of 557 kg ha-1 It is tolerant to white rust but moderately susceptible to Alternaria blight.

CAU- Toria 1

36. Name of the technology/variety: Rice var. CO 55

Source of technology/variety: Tamil Nadu Agricultural University, Coimbatore

Year of notification: 2022

Description of the technology/ variety: It is a derivative of ADT 43 x GEB 24 and short duration superfine variety with 115 days. The average yield of the culture is 6050 kg/ha. It has milling of 66% and head rice recovery of 62%. It is medium slender fine rice with cooking quality.

38. Name of the technology: Scientific cultivation of arrowhead (*Sagittaria sagittifolia*), an unexplored marshy-land crop

Source of the technology : COA (CAU, Imphal), Iriosemba, Imphal, Manipur

Year of adoption/ development : 2019

Description of technology with salient feature: Arrowhead (*Sagittaria sagittifolia*) is an attractive semi-aquatic plant with arrow shaped leaves and edible tubers belonging to the family Alismataceae and genus, *Sagittaria*. The plant is popularly known as *Koukha* in Manipur. *Koukha* is an unexplored herbaceous, perennial plant, propagated through seeds, tubers or pieces of stolones. It grows wild in marshy lands with 10 to 50 cm standing water or on a limited extent cultivated as mixed crop with low land rice. But it can as well be well cultivated as a sole crop.