Crop Protection

1. Name of the technology: Bacterial Entomo-pathogen: Bacillus cereus WGPSB2 for White Grubs

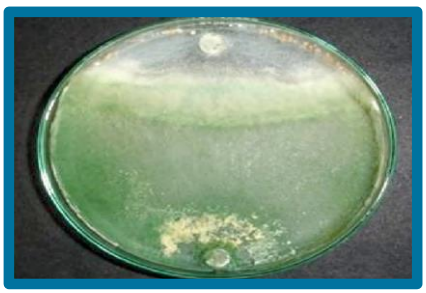
Source of the technology: ICAR-VPKAS, Almora

Description of technology: Bacillus cereus WGPSB2 is a gram +ve bacteria isolated from diseased white grubs, formulated in talc for field applications. It cause disease to the grubs when ingested by the early stage of grub and kills them. It is found effective to the grubs but safer to other native microbes in soil and not hazardous to other living organisms as tested by IITR, Lucknow. It is an effective alternative for chemical pesticides, which are used for the management of white grubs in the region.

Bacillus cereus WGPSB-2 caused >80% mortality of second instar larvae of *Anomala dimidiata* in lab and micro plot conditions at ICAR-VPKAS and found effective in fields also. It is an effective alternative for chemical pesticides used for the management of white grubs. Talc based application is easy when applied with FYM. It can be used as seed coating or drenching also.

2. **Name of the technology**: Bio-pesticide for Soil-borne Fungal Pathogens: Trichoderma harzianum strain 28 (Tr-28)

Source of the technology: ICAR-VPKAS, Almora



Description of technology: The isolate Tr-28 showed high antagonistic activity in vitro against six major soil borne plant pathogens viz., Rhizoctonia solani, Sclerotium rolfsii, Sclerotinia sclerotiorum, Fusarium solani, Fusarium oxysporum f. sp. lentis and Fusarium oxysporum f. sp. pisi. wilt and root rot of garden pea and lentil, root rot of french bean, damping off of tomato, capsicum and cauliflower. The isolate additionally possess plant growth promoting activity and also tolerant to cold.

The isolate Tr-28 is a bioagent for the management of soil borne diseases like wilt and root rot of garden pea and lentil, root rot of french bean, damping off of tomato, capsicum and cauliflower. The isolate additionally possess plant growth promoting activity and induces host plant resistance.

3. **Name of the technology**: White Grub Beetle Trap

Source of the technology: ICAR-VPKAS, Almora

Description of technology: White grub beetle trap is efficient, cost effective, light weight and user friendly light based insect trap specific for capturing white grub beetles (Patented: IN 290170). It consists of a CFL assembly, hitting fins, funnel and collection pot designed to attract and capture white grub beetles or scarab. It is effective for monitoring and mass trapping of white grub beetles. It is suitable in all cropping systems wherever white grub infestations are found. The traps can be used in community basis level for better results.

Light trap can be used for the management of white grubs by mass trapping adult beetles. It is found specific to white grubs and eco-friendly by not trapping beneficial species. The impact of light trap can be seen by reduction in beetle catches upto 58% in three years and grub reduction of 67% in different villages tested.

4. **Name of the technology:** Insect trap with indigenous ash hen's feather and methyl eugenol for the control of fruit fly (Bacterocera dorsalis)

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

Year of notification: 2020

Description of the technology: *Bactrocera dorsalis*, previously known as *Dacus dorsalis* and commonly referred to as the oriental fruit fly, is a species of tephritid fruit fly that is endemic to Southeast Asia. The adult, which is noticeably larger than a house fly, is mostly hyaline. The color of the fly is very variable, but there are prominent yellow and dark brown to black markings on the thorax. Maggots bore into semi-ripen fruits decaying them and ultimately dropping of fruits. Oozing of fluid and brownish rotten patches on fruitsare the other symptoms observed of fruit fly infection. Pheromone traps are ideal means of controlling as it will avoid using of toxic chemicals on fruits. Indigenous pheromone trap is developed by cutting 1/3rd of the empty mineral bottles from the top. The bottom portion of the bottle is filled with plain water upto 4 inches. A bottle cap filled with 2 ml of methyl eugeno l/3 g of hen's feather ash is allowed to float on the water in the bottle. The top portion of the bottle is placed in inverted position in order to prevent the escape of the trapped flies. The trap is placed in the field by tying over a bamboo stick fixed in the soil and maintained the trap at the height of one feet above the crop canopy. Twenty-five such traps are required per hectare at the spacing of 10 m x 10 m. The technique is already popular with the farmers of both hill and valley districts of the state. Comparative study has indicated that the significant results generated from the present investigation revealed that methyl eugenol Lure trap proved to be superior to other materials with the mean fruit fly catch of 850.80 trap d-1. The fields with Methyl eugenollure trap (25 traps ha-1) had net benefit of Rs. 25,000 ha-1 over the fields where farmers' practices were followed.

Different stages for making fruit fly pheromone trap

5. Name of the technology: Shatpada Aphid Kill

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: *Beauveria bassiana* ICAR-NBAIR Bb-5a (NAIMCC-F-00396), Type: Oil formulation; 1 × 108 cfu/mL, Shelf life: 12 months at 25-35°C, Target pests and crops: Aphids in chilli and brinjal (*Aphis gossypii*); cabbage (*Brevicoryne brassicae*) and cowpea (*Aphis craccivora*), Method of application: Three foliar sprays at 5 mL/L of water at 15 days interval after pest incidence; Water required for each spray: 200 L/ha

6. Name of the technology: Shatpada Rugose Whitefly Kill

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Isaria fumosorosea ICAR-NBAIR Pfu5 (NAIMCC-F-02139), Type: Talc; 1 × 108 cfu/g; Oil formulation; 1 × 108 cfu/mL, Shelf life: 12 months at 25-35°C, Target pests and crops: Rugose Spiralling Whitefly (Aleurodicus rugioperculatus) in coconut and oil palm, Method of application: Two-three foliar sprays at 5mL/L of water (or 5 g/L of water for talc formulation) at 15 days interval after pest incidence; Water required for each spray: 900 L/ha

7. Name of the technology: Shatpada Sucking Pest Kill

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: *Lecanicillium lecanii* ICAR-NBAIR Vl-8 (NAIMCC-F-01851), Type: Oil formulation; 1 × 108 cfu/mL, Shelf life: 12 months at 25-35°C, Target pests and crops: Aphids in chilli (*Aphis gossypii*) and cowpea (*Aphis craccivora*), Method of application: Three foliar sprays at 5 mL/L of water at 15 days interval after pest incidence; Water required for each spray: 900 L/ha

8. Name of the technology: Shatpada Grubicide

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Year of adoption/ development/notification:

Description of technology: Microbial Constituent: *Metarhizium anisopliae* ICAR-NBAIR Ma 4 (NAIMCC-F-01296), Type: Talc formulation; 1 × 108 cfu/g, Shelf life: 12 months at 25-35°C, Target pest and crop: White grubs (*Holotrichia* spp.) in sugarcane, Method of application: Soil application at 2.5 kg mixed with 250 kg farmyard manure per hectare, twice in a year during June/July and July/August at 30 days interval

9. Name of the technology: Shatpada larvicide

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: *Metarhizium anisopliae* ICAR-NBAIR Ma 35 (NAIMCC-F-04130), Type: Talc; 1 × 108 cfu/g; Oil formulation; 1 × 108 cfu/mL, Shelf life: 12 months at 25-35°C, Target pest and crop: Fall armyworm (*Spodoptera frugiperda*) in maize, Method of application: Three foliar sprays at 5 mL/L of water (or 5 g/L of water for talc based formulation) at 20, 30 and 40 days after sowing; Water required for each spray: 200 L/ha

10. Name of the technology: Shatpada Armour

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial constituent: *Bacillus thuringiensis* var. *kurstaki,* ICAR-NBAIR BT25, Type: Liquid; 1 × 108 cfu/mL, Shelf life: 12 months at 25-35°C, Target pest and crop: Fall armyworm (*Spodoptera frugiperda*) in maize, Method of application: Two to three foliar sprays at 10 mL/L of water at 25, 35 and 45 days after sowing; Water required for each spray: 200 L/ha

11. **Name of the technology**: Shatpada Terminator

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial constituent: *Bacillus thuringiensis* var. *kurstaki,* ICAR-NBAIR BTG4, Type: Liquid; 1 × 108 cfu/ml, Shelf life: 12 months at 25-35°C, Targetpestsandcrops: Legumepodborer(*Helicoverpaarmigera, Maruca* sp.), diamondback moth (*Plutella xylostella*), spotted stem borer (*Chilo partellus*), rice leaf folder (*Cnaphalocrocis medinalis*), brinjal shoot borer (*Leucinodes orbonalis*) and red hairy caterpillar (*Amsacta albistriga*), Method of application: Two to three foliar sprays at 20 mL/L of water at pre flowering and post flowering stages; Water required for each spray: 200 L/ha

12. **Name of the technology**: Shatpada All Rounder

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial constituent: *Pseudomonas fluorescens,* NBAIR-PFDWD, Type: Talc based; 1 × 108 cfu/g, Shelf life: 12 months at 25-35°C, used for *Thrips* spp. in capsicum and Fusarium wilt of red gram, Method of application: Foliar application at 20 g/L of water at 20, 30, 40 and 50 days after transplanting for the management of thrips in capsicum; Water required: 200 L/ha; Soil application in the root zone during 25, 40 and 55 days after sowing at 2.5 kg/ha for management of red gram wilt; Mix 2.5 kg of formulation in 250 kg farmyard manure and apply

13. **Name of the technology**: Shatpada Master Blaster

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial constituent: *Bacillus albus,* NBAIR-BATP, Type: Talc based; 1 × 108 cfu/g, Shelf life: 12 months at 25-35°C, Target pests and crops: Fall armyworm (*Spodoptera frugiperda*) of maize, tomato pin worm (*Tuta absoluta*) and Fusarium wilt of cucumber (*Fusarium oxysporum* f. sp. *cucumerinum*)

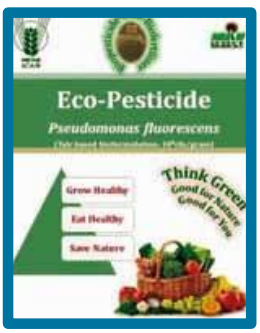
14. **Name of the technology:** ICAR Fusicont

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: *Trichoderma reesei,* CSR-T-3 (NAIMCC-SF-0030), Type: Wettable powder; 1 × 107 cfu/g, Shelf life: 12 months at 25-35°C, Target pests and crops: Fusarium wilt of banana (*Fusarium oxysporum* f. sp. *cubense* Tropical race 4 and race 1)

15. **Name of the technology:** Eco- Pesticide

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"



Description of technology: Microbial constituent:*Pseudomonas fluorescens* (NAIMCC-SB-0053), Type: Talc formulation; 1 × 108 cfu/g, Shelf life: 12 months at 25-35°C, Target pests and crops: Spot blotch of wheat, sheath blight of rice and wilt of tomato and chickpea

16. Name of the technology: Bio-Pulse

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial constituents: Trichoderma harzianum (NAIMCC-SF-0036) and Bacillus amyloliquefaciens (NAIMCC-SB-0052), Type: Talc formulation; 1 × 107 cfu/g each, Shelf life: 12 months at 25-35°C, Target pests and crops: Wilt of chickpea, lentil, pea, pigeon pea; damping off/seedling mortality in papaya; Target fungi: Rhizoctonia, Sclerotium, Sclerotinia, Fusarium, Pythium, Ralstonia, Macrophomina, Bipolaris and Phoma

17. Name of the technology: Maru Sena 1

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Trichoderma harzianum ICAR-CAZRI AZNF-5 (MCC 1723), Type: Carrier based formulation; 1 × 108 cfu/g, Shelf life: 4 months at 55°C, Target pathogen and crops: Fusarium oxysporum f. sp. cumini in cumin

18. Name of the technology: Maru Sena 3

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Bacillus firmus ICAR- CAZRI AZ-1 (MCC 0122), Type: Carrier based formulation; 1 × 108 cfu/g, Shelf life: 6 months at 25-35°C, Target pathogen and crops: Macrophomina phaseolina in legumes and oil seed crops

19. Name of the technology: Mishrit Maru Sena

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Trichoderma harzianum ICAR-CAZRI AZNF-5 (MCC 1723) and Bacillus firmus ICAR-CAZRI AZ-1 (MCC 0122), Type: Carrier based formulation; 1 × 108 cfu/g of each, Shelf life: 4 months at 55°C, Target pathogen and crops: Macrophomina phaseolina in legumes and oil seed crops

20. Name of the technology: NRRI-BBLF

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Beauveria bassiana TF6 (MTCC 12233), Type: Talc formulation; 1 × 109 cfu/g, Shelf life: 8 months at 25-35°C, Target pests and crops:, Rice leaf folder (Cnaphalocrocis medinalis)

21. Name of the technology: NRRI-MALF

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Metarhizium anisopliae, TF19 (MTCC 11644), Type: Talc formulation; 1 × 109 cfu/g, Shelf life: 8 months at 25-35°C, Target pests and crops: Rice leaf folder (Cnaphalocrocis medinalis)

22. Name of the technology: Triguard th-L

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Trichoderma harzianum Th4d (NAIMCC-F-02188), Type: Liquid suspension concentrate; 1 × 109 cfu/mL, Shelf life: 18 months at 25-35°C, Target pests and crops: Phytophthora seedling blight, Macrophomina root rot and Fusarium wilt of safflower and gray mold of castor, Alternaria aster leaf blight and powdery mildew of sunflower

23. Name of the technology: Triguard th-P

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Trichoderma harzianum, Th4 (NAIMCC-F-02188), Type: Wettable powder; 1 × 109 cfu/g, Shelf life: 18 months at 25-35°C, Target pests and crops: Phytophthora seedling blight, Macrophomina root rot and Fusarium wilt of safflower and Fusarium wilt of castor and Aspergillus root rot in groundnut

24. Name of the technology: Triguard ta-P

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Trichoderma asperellum, Ta DOR 7316 (MTCC 5623), Type: Wettable powder; 1 × 109 cfu/g, Shelf life: 18 months at 25-35°C, Target pests and crops: Phytophthora seedling blight, Macrophomina root rot and Fusarium wilt of safflower and Fusarium wilt of castor

25. Name of the technology: Bioguard Bt-L

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Bacillus thuringiensis var. kurstaki, DOR Bt-127 (MTCC 5976/ NAIMCC-B-01463), Type: Liquid suspension concentrate; 1 × 1011 cfu/mL, Shelf life: 24 months at 25-35°C, Target pests and crops: Spodoptera litura in soybean

26. Name of the technology: Mycoguard Bb-L

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Beauveria bassiana (ITCC 4513), Type: Liquid suspension concentrate; 1 × 1012 cfu/ mL, Shelf life: 24 months at 25-35°C, Target pests and crops: Helicoverpa armigera in pigeon pea

27. Name of the technology: ARKA Krishi Vriddhi

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Trichoderma harzianum ICAR-IIHR Th-2 (NAIMCC- SF-0033/ITCC 6888), Type: Wettable powder; 2 × 106 cfu/g, Shelf life: 10 months at 25-35°C, Target pests and crops: Root knot nematode (Meloidogyne incognita), Fungal pathogens–Fusarium oxysporum f. sp. vasinfectum, Fusarium oxysporum f. sp. lycopersici, Sclerotium rolfsii and Fusarium solani, Crops: Brinjal, tomato, carrot and okra

28. Name of the technology: ARKA Krishi Veera

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Trichoderma viride ICAR-IIHR Tv-5 (NAIMCC-SF-0032/ ITCC 6889), Type: Wettable powder; 2 × 106 cfu/g, Shelf life: 10 months at 25-35°C, Target pests and crops:, Root knot nematode (Meloidogyne incognita), Fungal pathogens–Fusarium oxysporum f. sp. vasinfectum, Fusarium oxysporum f. sp. lycopersici, Sclerotium rolfsii and Fusarium solani, Crops: Brinjal, tomato, carrot and okra

29. Name of the technology: Manjari Vineguard

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial constituent: Trichoderma asperelloides 5R (NAIMCC-SF-0026), Type: Liquid formulation; 5 × 1011 cfu/mL, Shelf life: 3 months at 25-35°C, Target pests and crops: Powdery mildew of grapes

30. Name of the technology: Manjari Rakshak

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial constituent: Trichoderma afroharzianum (NAIMCC-F-01938), Type: Liquid; 5 × 108 cfu/mL, Shelf life: 3 months at 25-35°C, Target pests and crops: Powdery mildew of grapes

31. Name of the technology: Pusa 5SD

Source of the technology: *ICAR Technologies: Biopesticides for Eco-friendly Pest Management*"

Description of technology: Microbial Constituent: Trichoderma harzianum IARI P-4 (MTCC 5371), Type: Wettable powder; 108 cfu/g, Shelf life: 25 months at 25+8°C, Target pests and crops: Fusarium oxysporum f. sp. ciceris, Sclerotium rolfsii and Sclerotinia sclerotiorum in chickpea;, Rhizoctonia solani and R. bataticola in chickpea and mungbean; Fusarium oxysporum f. sp. lycopersici in tomato; Pythium ultimum and R. solani in french bean; and major soil and seed borne fungal pathogens in various crops

32. **Name of the technology**: Implementation of An Effective and Successful Management Tactics against Diamondback Moth (Plutella xylostella L.) on Cabbage

Source of the technology: Chandra Shekhar Azad University of Agriculture & Technology, Kanpur

Year of the technology: 2022

Description of technology: In India, diamondback moth has national importance on cabbage as it causes 50- 80% annual loss in the marketable yield. Use of excessive and indiscriminate dosages of conventional insecticides has often posed negative impact such as adverse effect on non-target organisms, Development of resistancy in targeted insect pest, hazardous and residual effect of these conventional insecticides at various tropic levels have also caused incalculable damage to every aspect of environment so, keeping this in mind most reliable management tactics are adopted and explored from lab to farmers agricultural land.

33. **Name of the technology:** Management of citrus nematode, Tylenchulus semipenetrans using bioagent

Source of technology: AICRP on Nematodes in Agriculture

Year of notification: 2019

Description of the technology: Apply 200 g *Trichoderma viride* per plant (enriched with vermicompost/FYM) for management of citrus nematode, *Tylenchulus semipenetrans* 20 kg *Trichoderma viride* mixed with 180 kg of Vermicompost / well decomposed FYM. This mixture should be covered with gunny bag and to be placed in shade for 15 days. Periodical sprinkling with water to be done in order to maintain adequate humidity. 200 g of this mixture should be applied per plant around the base twice in a year, along with application of fertilizer

Enrichment of FYM with *T. viride*

Covered with gunny bag after enrichment

34. **Name of the technology:** Cultivation of Milky mushroom (Calocybe indica)

Source of technology: ICAR-IIHR, Bengaluru

Description of the technology: Milky mushroom is an edible mushroom which can be easily grown either for commercial purpose or for home consumption. It is the first indigenous variety of mushroom to be commercialized. It is the first truly tropical mushroom which can be cultivated in the tropical temperature regime of 30-40°C. It is an excellent source of high quality protein and vitamins (especially Vitamin B). Its high fiber content makes it excellent for stomach related ailments. The average biological efficiency can be 60-90%. It has excellent shelf life as compared to oyster or button mushrooms. Its spore content is very low hence does not cause respiratory allergy problem as the presently grown oyster species.

35. **Name of the technology:** Cultivation of Elm Oyster mushroom *(Hypsizygus ulmarius)*

Source of technology: ICAR-IIHR, Bengaluru

Description of the technology/ variety: It was introduced for commercial production for the first time in India by IIHR. It is initially gray in color, fading on maturity, Gills and stalks white, large and fleshy with excellent taste occuring in clusters. Shelf life is 36-48 hours at 25-30°C and 4-5 days at 4°C. Commercial cultivation has been standardized on pasteurized (80-85°C for 2 hours)/ sterilized (121 °C, 15 lb pressure for 15 minutes) paddy straw. It completes spawn run in 25-30 days in a temperature range of 25-30°C. Pinhead initiation begins after 4-7 days of opening of the bags and matures for harvest within 2-3 days. The total cropping cycle of this variety is 37-42 days. The average biological efficiency of 60-80% can be obtained within this period. It can be marketed as fresh, dry or as mushroom powder. For natural growing any region in India having a temperature range between 20-25°C. All year round natural cultivation can be undertaken in North eastern states of Manipur, Meghalaya, Mozoram, Nagaland and Arunachal Pradesh.

36. **Name of the technology/variety:** Cultivation of Shiitake mushroom (*Lentinula edodes)*

Source of technology/variety: ICAR-IIHR, Bengaluru

Description of the technology/ variety: The shiitake mushroom is an excellent edible and medicinal mushroom which can be easily grown either for commercial purpose or for home consumption. It is an excellent source of high quality protein and vitamins (especially Vitamin B). It is devoid of fat and sugar hence is excellent for diabetics and heart patients. Lentinan extracted from this mushroom is a drug for cancer. It has excellent cholesterol reducing properties. The average biological efficiency can be 70-90%. It can be grown on hardwood sawdust of Teak, sal and Indian Kino tree.

37. **Name of the technology/variety:** Cultivation of Reishi mushroom *(Ganoderma lucidum)*

Source of technology/variety: ICAR-IIHR, Bengaluru

Descriptionofthetechnology/variety:Mushrooms brown in color with shining cap. The lower pore surface creamy to white changing color on bruising. Spores brown. It can be grown on sterilized sawdust or paddy straw. Optimum temperature requirement for spawn running 30-32°C. Spawn running period 25-30 days. Cropping requires an optimum temperature of 30-32°C, humidity of 80-85%, light and ventilation. Mushrooms can be harvested in 2-3 flushes after which the entire cycle is repeated. Total cultivation cycle of 120-150 days. Biological efficiency potential 25-30%. Since this mushroom is woody it can be dried and stored for several months. It can be marketed as powder. Reishi mushroom by virtue of being a plant pathogen, demands that utmost care be taken during disposal of the spent mushroom substrate. The spent substrate may be burnt off to avoid its spread to other trees. It is an excellent medicinal mushroom. Species of Ganoderma have been used traditionally as medicinal mushrooms in China and Southeast Asia. Ganoderma nutriceuticals are used for treating patients suffering from cardiovascular problems, leukemia, leucopoenia, hepatitis, nephritis, gastritis, insomnia, asthma, bronchitis and for cholesterol-lowering. Recent pharmacological and clinical studies suggest that this mushroom is a blood-thinner and exhibits anti-cancer/anti-tumour effects. It is effective against Hepatitis – B and lowers blood glucose and blood pressure.

38. **Name of the Technology**: Production technology of Pleurotus tuber-regium: Arka PT-1

Source of the technology: ICAR-IIHR, Bengaluru

Year of the technology: 2021

Description of the Technology: It is highly nutritious having high amounts of protein (40.34%), fibre (16.49%) and iron (9.96 mg/100g) and zinc (9.13 mg/100g). This species can be grown under tropical regions having temperature range of 30-35°C or as summer crop in other regions. A new edible mushroom which was until now seasonally available can be made available year round. This new mushroom can now be easily cultivated on paddy straw which is amply available in north east.

39. **Name of the Crop:** Oyster Mushroom (var. RC Manichenggum -1)

Source of technology/variety: ICAR-RC-NEHR, Manipur Centre

Year of release: 2024

Description of the variety: The variety has grouped medium-large fruit bodies (brownish-white tinge) and broad, fan or oyster-shaped semi-circle cap with an average wide of 9 cm. The gills of the mushroom are white to cream, shaded light-beige to yellowish-brown and the stipe is laterally attached to substrate. The spore print of the mushroom is cream in colour. The fruit bodies are fleshy and firm with very good quality and market acceptability as evident by the trials at farmer's fields and disposal of produce by the mushroom grower. The spawn run takes 22-26 days, pinhead forms within 12-14 days and time to first harvest is 34-39 days. The best growing condition is 22-27°C temperature, 80-90% relative humidity and 800 lux light intensity for 6 hrs (day light from window screen is enough). The potential biological yield of the variety is 85.76 kg/100 kg dry substrate. The fruiting bodies contain 36.34% carbohydrate, 14.26% protein, 1.8% fat and 37.25% dietary fiber on dry weight basis. It is tolerant to competitor moulds and green moulds.