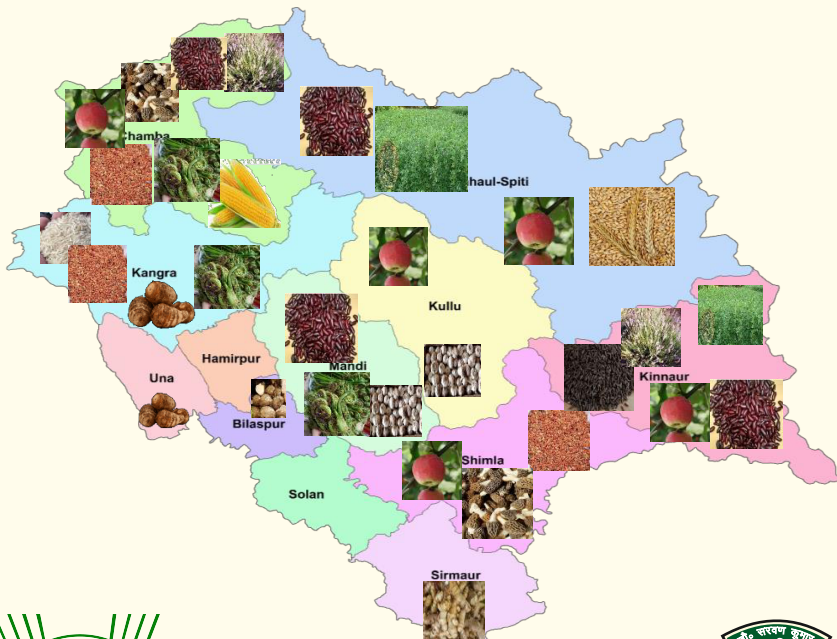


Germplasm Conservation and Patents



NAHEP



Centre of Advanced Agricultural Science & Technology (CAAST)
National Agricultural Higher Education Project (NAHEP)
(ICAR- WB Project)

Protected Agriculture and Natural Farming (PANF)
and

Directorate of Research

Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishwavidyalaya
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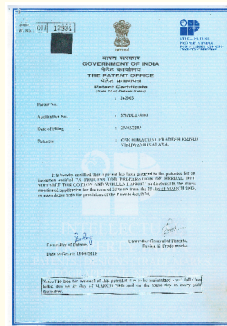
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Patents

1. “A Process for Preparation of Herbal Dye Suitable for Cotton and Woolen Fabric”

Patent No. : 242803
Application No. : 370/DEL/2003
Date of filling application : 25/03/2003
Date of grant : 13/09/2010
Name of the Inventor(s) : Late Dr.(Mrs.) Asha Bansal
Dr. (Mrs.) Anjali Sood
Dr.(Mrs.) Anjali Sharma

Five species such as Lumb (*Biden spilosa*), Pecanut (*Carya illinoensis*), Apricot (*Prunus armeniaca*), Litchi (*Litchi chinensis*) and Crofton weed (*Eupatorium adenophorum*) were identified as dye sources from different plant parts for use in dyeing of different fabrics as natural dye source. Process for extraction and application of dye on cotton and woolen yarn were optimized.

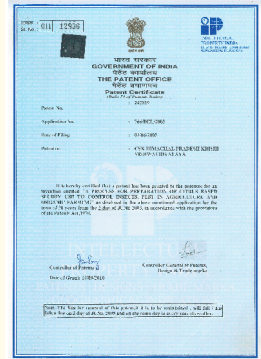


2. “A Process for Preparation of Citrus Based Slurry Use to Control Insects, Pests in Agriculture and Organic Farming”.

Patent No. : 242829
Application No. : 766/DEL/2003
Date of filling application : 02/06/2003
Date of grant : 14/09/2010
Name of the Inventor(s) : Late Dr. D.C. Sharma
Late Dr.N.P. Kashyap
Dr.R.G.Sud

The invention relates to a process for preparation of citrus based formulation and organic manure to use for the control of insect pests. The formulation is based on fruit waste material like peel, seeds, pulp etc. left over after extracting juice from citrus fruits like lemon, orange, kinnow, galgal etc. The

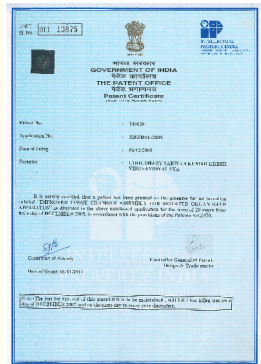
process involves air drying, grinding and obtaining fine powder of citrus waste, isolation of the active constituents from the grinded powder and preparation of citrus waste slurry. The slurry thus obtained is mixed with additives, inert material and emulsifier for the preparation of dust and emulsifier concentrate formulation to use as bio-pesticide for insect pest management.



3. Improved Tissue Chamber Assembly for Isolated Organ Bath Apparatus

Patent No. : 249639
 Application No. : 3283/DEL/2005
 Date of filing application : 06/12/2005
 Date of grant : 01/11/2011
 Name of the Inventor(s) : Dr. R.S. Telang

"Improved tissue chamber assembly for isolated organ bath apparatus" is an assembly in which the tissues can be mounted in an isolated organ bath apparatus connected to anphysiograph and the effect of various drugs on the tissues can be recorded. The tissues can be mounted for long intervals with continuous supply of fluid and air and the effect of various drugs could be assessed on them.

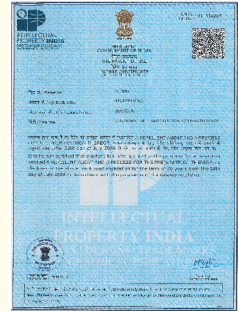


4. A Repellent agent and a process for the preparation thereof

Patent No. : 317940
 Application No. : 1733/DEL/2006
 Date of filing application : 28/07/2006
 Date of grant : 08/08/2019
 Name of the Inventor(s) : Dr. Ajai Srivastava
 Dr. Sanjay Guleria
 Dr. Ashok Kumar

The Scientific name of the plant is *Dodonea viscosa* (L.) it is a shrub growing to 1-3 m (3.3-9.8 ft) tall, rarely a small tree to 9 m. The Leaves are variable in shape, generally obovate but some of them are lanceolate, often

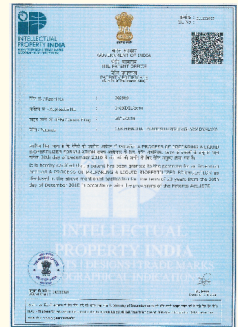
sessile, 4-7.5 cm long and 1-1.5 cm broad, alternate in arrangement and secrete a resinous substance, Leaf texture is leathery, tough but pliable. It is wild in nature found growing in barren lands around roads and abandoned areas. The plant is commonly called as “**Mehandru**” as local vernacular name. It is used for repellency of insect pests such as mustard aphid, termites and mosquitoes.



5. A process of preparing a liquid biofertilizer formulation

Patent No. : 362869
 Application No. : 3169/DEL/2010
 Date of filing application : 30/12/2010
 Date of grant : 24/03/2021
 Name of the Inventor(s) : Dr. S.S. Kanwar

A liquid biofertilizer formulation was developed with locally available liquid carrier amended with additives. This liquid carrier was then inoculated with efficient native Nitrogen fixers and Phosphate solubilizers for the development of liquid biofertilizer. This developed formulation could support high microbial load upto 300 days at room temperature and is quite effective for cash crops.



Germplasm Conservation Registration of CSK HPKV Varieties by PPV-FRA

S.N.	Crop	Registration No.	Category of Variety	Denomination of the Candidate Variety	Date of Certificate Issue
Registered Varieties					
1.	Wheat	80 of 2009	Extant	Chandrika (HPW-184)	20/July/2009
2.	Wheat	87 of 2009	Extant	HPW 147 (Palam)	20/July/2009
3.	Wheat	93 of 2009	Extant	HPW-155 (Onkar)	20/July/2009
4.	Wheat	182 of 2012	Extant	Surbhi (HPW 89)	09/November/2012
5.	Wheat	191 of 2012	Extant	HPW-251	09/November/2012
6.	Wheat	125 of 2016	New	HPW 249 (Asmi)	18/April/2016
7.	Wheat	267 of 2020	Extant	HPW- 349	4/August/2020
8.	Wheat	Reg/2020/324	Extant	DH 114 (Him Pratham)	2 nd November 2021
9.	Wheat	Reg/2020/338	Extant	Him Palam Gehun 2 (HPW 368)	2 nd November 2021
10.	Barley	263 of 2017	Extant	HBL 391 (Gokul)	29/September/2017
11.	Barley	Reg/2022/009	Extant	Him Palam Jau-1 (HBL 713)	09/June/2023

12.	Maize	3 of 2010	Extant	HQPM-1	20/October/2010
13.	Maize	12 of 2010	Extant	Him 129 (EHF 1121)	20/October/2010
14.	Maize	41 of 2015	New	Bajaura Makka 1 (L-173)	22/January/2015
15.	Maize	278 of 2016	New	Bajaura Makka (L 201 Composite)	26/August/2016
16.	Rice	54 of 2012	Extant	HPR-1156 (IET-16007)	02/July/2012
17.	Rice	65 of 2012	Extant	HPR 1068	02/July/2012
18.	Rice	66 of 2012	Extant	HPR 2143	02/July/2012
19.	Soybean	5 of 2019	Extant	Palam Soya (P-30-1-1)	23/January/2019
20.	Indian Mustard	221 of 2013	Extant	RCC-4	06/November/2013
21.	Rapeseed (Gobhi Sarson)	222 of 2013	Extant	Neelam (HPN 3)	06/November/2013
22.	Rapeseed (Gobhi Sarson)	235 of 2013	Extant	Him Sarson-1	19/November/2013
23.	Brown Sarson	223 of 2013	Extant	KBS-3	06/November/2013
24.	Linseed	232 of 2013	Extant	Binwa (KL-210)	08/November/2013
25.	Linseed	233 of 2013	Extant	Baner (KL-224)	08/November/2013
26.	Lentil	62 of 2018	Extant	LL 931	28/March/2018
27.	Chickpea	Reg/2021/006	Extant	Him Palam Chana 1 (DKG 986)	15/ November/ 2022
28.	Garden Pea	Reg/2020/386	Extant	Palam Triloki	2 nd November 2021
29.	Garden Pea	Reg/2020/387	Extant	Palam Sumool	2 nd November 2021
Farmers' variety Registered					
30.	Maize	145 of 2015	Farmer	Hachhi Kukdi	14/May/2015
31.	Maize	144 of 2015	Farmer	Ratti (Red) Makka	14/May/2015
32.	Maize	143 of 2015	Farmer	Chitkanu	14/May/2015
33.	Rice	62 of 2013	Farmer	Chhohartu	05/April/2013
34.	Rice	Reg/2020/30	Farmer	Safed Phulpatas	December, 2022
Farmers Varieties Submitted through CSK HPKV Palampur					
35.	Rice	-	Farmers variety	Matali	Under consideration
36.	Rice	-	Farmers variety	R 575	Under consideration
37.	Rice	-	Farmers variety	Kalijhini	Under consideration
38.	Rice	-	Farmers variety	Kalijhini Dhan	Under Process
39.	Rice	-	Farmers variety	Jattu Dhan	Under Process
40.	Rice	-	Farmers variety	GOSHA DHAN	Under Process
41.	Mash	-	Farmers variety	Chamba Mash	Under consideration
42.	Mash	-	Farmers variety	HPCM-1 (Chamba mash)	Under Process
43.	Mash	-	Farmers variety	KDM1	Under Process
44.	Mash	-	Farmers variety	PTM9	Under Process
45.	Mash	-	Farmers variety	KSM12	Under Process
46.	Mash	-	Farmers variety	RDM11	Under Process
47.	Rajmash	-	Farmers variety	Barot Rajmash (Yellow & Red)	Under consideration
48.	Rajmash	-	Farmers variety	HPBRR-1	Under Process
49.	Rajmash	-	Farmers variety	HPBYR-2	Under Process

Animal Genetic Resource Conservation

- Pahari cow is reared in the hilly regions of Himachal Pradesh- registered by NBAGR
- Suitable for hilly terrain
- Used for both milk and draught power
- Daily milk yield ranges from 2 to 3 kg and lactation milk yield from 500-600 kg



GI obtained

The University facilitated the *Shong Kalazira Utpadan Sangh* (Farmers society) to get GI on Kalazira - 2019 (Gi432).

A certificate from the Government of India, Ministry of Agriculture and Farmers Welfare, regarding the Geographical Indication (GI) for Shong Kalazira. The certificate is issued to the Shong Kalazira Utpadan Sangh. The GI number is 432 and the date of registration is 17.07.2019. The certificate is valid for 10 years from the date of registration. The certificate is signed by the Registrar of Geographical Indications, Chandigarh.

Plant Genome Saviour Awards

Maize

A couple of years back the University scientists had helped farmers of Bhandal panchayat in Chamba district for Plant Genome Savior Community Award 2019 for conserving land races of maize Haachi Kukri (white), Ratti (red) and Chitkanu (popcorn).

Hachhi Kukadi

This is a white coloured maize variety having speciality of tasty and sweet flour. This variety is having capability of producing more fodder due its taller length and is beneficial is fulfilling the fodder requirement of the area during winter months.

Ratti (Red) Makka

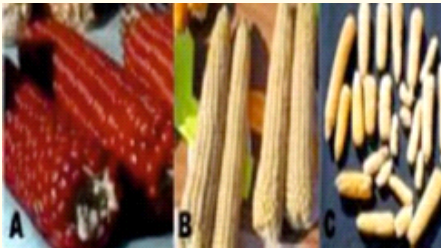
This variety having dark reddish orange colour is full of nutritious elements.

Chitkanu

This is a popcorn type variety which is being used for popping since long by the farming community.

All the three varieties have been conserved by Bhandal panchayat of district Chamba. After scientific experiments and evaluation by the university scientists, the application for registration of these varieties was submitted through the panchayat to Plant Protection Varieties and Farmers Rights Authority. Then these varieties were got registered. The concerned panchayat received Plant Genome Saviour Community award worth Rs. 10.0 lakh.

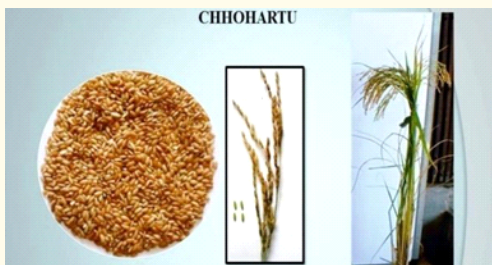
Plant Genome Saviour Community Award



Red Rice

Red rice farmers of Rohru (Shimla) were awarded prestigious Plant Genome Savior Award carrying a cash prize of Rs. 10 lakh, citation and memento on 11 November, 2023. The university scientists gathered all the scientific data and helped the red rice growing farmers to register traditional red rice variety Chhohartu with Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA), Govt. of India during 2015. The university scientists helped the farmers to pursue the matter again with renewed efforts of conservation, development, popularization and further spread of red rice resulting in bringing laurels to the State. The university helped red rice growing farmers to form a society as the award is given to farmers' society only. Red rice is under cultivation in an area of about 1000 hectare in different villages like Peja, Masli, Jangla, Daboli, Kaloti of Chhohara valley in Rohru subdivision in Shimla district. It is cultivated on both sides of Pabbar river adapted to cultivation from 1300 meter to 2100 meter and is categorized under Japonica red rice. Chhohartu has red pericarp (outer layer) and it fetches premium price in the market and has set an excellent example of vocal for local. Since centuries the paddy of this variety is served during community lunches and 'yajnas.' The excess water of thick consistency decanted after cooking of red rice is considered healthy for pregnant ladies. It is gifted on various occasions too.

Plant Genome Saviour Community Award



Kala Zeera

Kala Zeera Utpadan Sangh from Shong village in district Kinnaur received prestigious Plant Genome Saviour Community Award on 12 September, 2023 worth Rs.10 lakh along with a citation. It was the initiative of the university which enabled farmers to form the Kala Zeera Utpadan Sangh (KZUS), scientifically documented traits of the crop and applied for this community award in June, 2022. This is India's prestigious award for acknowledging the farmers' significant contribution in conserving and development of plant varieties. University scientists have compiled all the scientific data and assisted the Kala Zeera growing community to conserve, develop, popularize and formally registering its valuable land races with PPVFRA, Govt. of India. Kala Zeera though widely grown in forests is currently under cultivation in an area of about 47 hectares in Shong village of Kinnaur district. This crop has culinary, perfumery, carminative as well as medicinal values as stimulant, expectorant, antispasmodic and diuretic properties. Essential oils namely terpenoids, phenylpropanoids, polyenes etc. in seed possess antioxidative, antifungal and antibacterial attributes. Kala Zeera has premium price in the market and stands as an example of the 'vocal for local' movement.

Plant Genome Saviour Community Award



Plant Genome Saviour Farmer Recognition Award (Garib Das)

With the scientific facilitation of CSK H.P. Agriculture University, a progressive vegetable grower, Sh. Garib Das from village Burli Kothi near Paprola has been awarded Rs. One lakh 'Plant Genome Saviour Farmer Recognition' award by the Govt. of India.

The farmer has been cultivating Desi Kheera (traditional cucumber) known as Paprola Kheera and conserving the purity of this local land race for more than 40 years. Paprola Kheera grown by him is known for its high water content, better palatability, more flesh, more crunchiness, less number of seeds and better taste with more shelf life. Paprola Kheera helps him fetch premium price in the market.

The University scientifically tested all horticultural and quality parameters of Paprola Kheera in the last two years and submitted all necessary documents to Protection of Plant Variety and Farmers' Rights Authority (PPVFRA) for registration.

Plant Genome Saviour Award/Recognition



Breed Conservation Award

Sh. Karam Chand, progressive farmer from Holi, District Chamba was awarded Breeder Savior Award - 2017 for Gaddi goat conservation by the ICAR-NBAGR (National Bureau of Animal Genetic Resources), Karnal.



Sh. Nandu Ram, progressive farmer from Palampur was awarded National Breed Conservation Award - 2021 under individual category (small ruminants) for Gaddi goat breed by the ICAR-NBAGR (National Bureau of Animal Genetic Resources), Karnal on 23rd December 2021.

