



Innovation for Sustainable Agriculture

Aditya Bioinnovation Pvt Ltd

Nagpur

Dr S S Bagchi

Co-Founder

M:9823416889

www.adityabioinnovation.in

Our Innovation Story



Jayesh Bellare - The Material Basis of Homeopathic Medicines (English version)

Physico-chemical work on metal based medicines is published, peer-reviewed

Chikramane et al, Homeopathy, 2010, 99, 231-242

ORIGINAL PAPER

Extreme homeopathic dilutions retain starting materials: A nanoparticulate perspective

Prashant Satish Chikramane¹, Akkibebal K Suresh^{1,2}, Jayesh Ramesh Bellare^{1,2,*} and Shantaram Govind Kane^{1,*}

¹Department of Chemical Engineering, Indian Institute of Technology (IIT), Bombay, Adi Shankaracharya Marg, Powai, Mumbai 400 076, Maharashtra, India
²Department of Biocscience and Bioengineering, Indian Institute of Technology (IIT), Bombay, Adi Shankaracharya Marg, Powai, Mumbai 400 076, Maharashtra, India

PRASHANT

Research group from IIT Bombay recognised for their work that shows a scientific basis for homeopathic medicines and its connection to nanotechnology

Sparshy Raina
Read time: 3 mins
Mumbai | Jul 30, 2019, (Research Matters)

- ❖ Prof Dr Jayesh Bellare and a 6 member research team of IIT BOMBAY (2010-2015) has proved that :-
- ❖ Nanoparticle is the basis of Homeopathic medicines which can be detected by scanning through electron microscope.
- ❖ Bioactive nanoparticle remains, despite of super Avogadro's dilutions (in high dilution) and low doses, can produce stimulus to the cell.

About Our Startup

- ❖ **An IITB paper had enlightened us in 2015-16 and since then we have started our innovation journey.** We are three co-founders combining an IITian (IIT-H), a Ph.D. in Chemistry and a B.E. graduate.
- ❖ Aditya Bioinnovation Pvt. Ltd., an Agri-startup, was incorporated in 2017 in Maharashtra and is registered with DPIIT, Govt. of India, in 2019. It got incubated with IGKV, Raipur. We started paid trials and commercialisation from 2019-20.
- ❖ Our start-up is supported with a grant of Rs 10 lacs by the Ministry of Agriculture & farmer welfare, Government of India in 2020.
- ❖ **Our Startup Received the “Best Innovative Agri Startup Award” at Agri Food Empowering India Awards in November 2021.**

Our Aims and Objective

AIMS & Objective

Our aim is to produce innovative agricultural agri inputs (Plant protector and Biostimulants) for improved farm productivity with low agriinput cost.

Objective :-

1. By producing low volume high efficient nano fertilizer
2. Minimising cost of production by optimising resources
3. Minimising transport cost to keep the price low

MISSION

To provide economically viable and environmentally sustainable agro-inputs through innovation to farmers

VISION

To augment the income of farmers through affordable eco friendly agro-inputs for a sustainable future.

Our Management Team

Mr. Vikas Gupta
Chartered Accountant
& RP- NCLT

Dr S. S. Bagchi
MSc, PhD (Chemistry)
Co- founder & Director

Ms Archana Bagchi
MSc ,MBA
Director

Mr ParthoPratim Chatterjee
M Tech (IIT HYD); Surface
Engineering Nanomaterials
IIT (Roorkee);
Co founder & Technical advisor

Mr. Aniruddha Bagchi
B.E.
Co founder & Director


About Our Products


- ❖ Aditya Bioinnovation has been engaged in the development of biostimulants and Immunity builder products from botanical extracts and natural salts for preventive and curative applications on crops.
- ❖ All products are formulated in a mixture of water & ethanol extract. All the contents are in nano form, ie highly diluted form, the dilution being in the range of 1×10^{-2} to 1×10^{-60} .
- ❖ Immunity Builder or plant protector when spread as a preventive or applied during the onset of the disease or pest attack, it helps to fight by improving the immunity of the crops (creating secondary metabolites). The result is seen after 04 days of its application.

About Our Products

- ❖ The biostimulant nano crystal is under validation at IGKV Raipur. The first phase trial on the crop of Rice is completed and its reports are encouraging . **Our product was tested at different rice crop stages - transplanting, tillering and panicle initiation . Reports suggest that the nanocrystals are compatible/comparable with NPK and Organic manures .Product can replace 25% of NPK fertilizer and also 5 t of FYM in rice . Report No.DRS/ADRII/PPP/2022/4588 Dated 14.3.2022.**
- ❖ Products are developed mostly on the basis of farm trials. Till now only 03 formulations have been tested through scientific organisations in India.
- ❖ The biostimulant has been developed on farm trials of Cotton, Vegetables, Rice, Wheat, Pigeon pea, Chickpea, Turmeric etc.
- ❖ **The Immunity builder or plant protector has been developed for sucking pests like white fly, aphids, borer- helicoverpa species pink bollworm in cotton .**

Indian patent – Fertilizer & Plant Protector






भारत सरकार
GOVERNMENT OF INDIA

पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE
(Rule 74 of The Patents Rules)


पत्रांक : 011118930
SL No :



पेटेंट सं. / Patent No.	326754
अर्जन सं. / Application No.	201711022620
प्रदान करने की तिथि / Date of Filing	28/06/2017
पेटेंटी / Patentee	SURJYOTI SUDALCHANDRA BAGCHI

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में बराबरमें A NOVEL FORMULATION USEFUL AS A FERTILIZER AND THE METHOD THEREOF का एक आविष्कार के लिए, पेटेंट आविष्कार, १९७० के उपबन्धों के अनुसार आज तारीख 28th day of June 2017 से बीस वर्षों की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A NOVEL FORMULATION USEFUL AS A FERTILIZER AND THE METHOD THEREOF as disclosed in the above mentioned application for the term of 20 years from the 28th day of June 2017 in accordance with the provisions of the Patents Act, 1970.




INTELLECTUAL PROPERTY INDIA

TRADE MARKS

DESIGNS

TRADE MARKS


GRAPHICAL INDICATION




०१/१२/२०१७
Date of Grant

०१/१२/२०१७
Date of Grant

ध्यान - इस पेटेंट के नवीकरण से लिए बीस, बीस दो वर्ष काका ३. 28th day of June 2017से और उसके समान करने का है जो कि हर दो वर्षों।
Note - The term for renewal of this patent, it is to be renewed will be 20/22 years from 28th day of June 2017 and on the same day in every year thereafter.






भारत सरकार
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PATENT CERTIFICATE
(Rule 74 of The Patents Rules)


पत्रांक : 011121529
SL No :



पेटेंट सं. / Patent No.	333488
अर्जन सं. / Application No.	201811007989
प्रदान करने की तिथि / Date of Filing	04/03/2018
पेटेंटी / Patentee	1.SURJYOTI SUDALCHANDRA BAGCHI 2.PARTHO PRATIM CHATTERJEE 3.ANURIDDHA SURJYOTI BAGCHI

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में बराबरमें A COMPOSITION USEFUL AS A PEST-CONTROLLING AGENT FOR AGRICULTURAL AND HORTICULTURAL CROPS नामक आविष्कार के लिए, पेटेंट आविष्कार, १९७० के उपबन्धों के अनुसार आज तारीख 4th day of March 2018 से बीस वर्षों की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A COMPOSITION USEFUL AS A PEST-CONTROLLING AGENT FOR AGRICULTURAL AND HORTICULTURAL CROPS as disclosed in the above mentioned application for the term of 20 years from the 4th day of March 2018 in accordance with the provisions of the Patents Act, 1970.




INTELLECTUAL PROPERTY INDIA

TRADE MARKS

DESIGNS

TRADE MARKS

GRAPHICAL INDICATION



०४/०३/२०१८
Date of Grant

०४/०३/२०१८
Date of Grant

ध्यान - इस पेटेंट के नवीकरण से लिए बीस, बीस दो वर्ष काका ३. 4th day of March 2018से और उसके समान करने का है जो कि हर दो वर्षों।
Note - The term for renewal of this patent, it is to be renewed will be 20/22 years from 4th day of March 2018 and on the same day in every year thereafter.

USP Of Our Products

- ❖ Low volume – high potential: - 50 ml of content is required for one acre of crop. The biggest advantage is that it shows results in saline soil too.(DTSP Dahanu- Adani group ,Maharashtra)
- ❖ Eco friendly & human friendly; residue free; ingredients are natural.
- ❖ Easy to carry as volume is low – lower transportation cost.
- ❖ Can reduce the use of chemical fertilizers and organic manures.

Product - Biostimulant

Harit Biogold / Kohinoor Gold - Biostimulant (Indian Patent No 326754)



- ❖ Unique blend of plant derived nutrients (plant extracts in water- ethanol) and natural salts which contains essential minerals, organic carbon, amino acids & plant based antioxidants.
- ❖ This product is made from naturally derived ingredients and is non-toxic.
- ❖ Validated at Agri Bio Foundation Agri Biotech Foundation Hyderabad , India.
(Formerly AP-Netherlands Biotechnology Programme, Recognized as a Scientific and Industrial Research Organization by SIRO- Govt of India)

Product - Biostimulant

Kohinoor / Harit biogold Nano Crystals - Biostimulant for soil plication only



- ❖ Best quality humic- amino granule and blend of plant derived nutrients (plant extracts in water-ethanol) and natural salts incorporated in the granules.
- ❖ **Dose** : 2 kg for vegetables, 2 kg for wheat , jowar bajra , 3-4 kg for sugarcane per acre (0.40 hectare of crop)
- ❖ Validation is in process at Indira Gandhi Agriculture University ,Raipur , India

Product - Biostimulant

Harit Biogold – plant health booster



This is 100% water soluble product - contains humic , plant extracts, Seaweed extract. Amino acid can be applied in soil as well as for foliar spray. It is complimentary to Kohinoor nano crystals.

Composition :- Potassium Humate, Alfa Alfa extract, Avena sativa Ricinus , Amino acid, Seaweed Extract & Nanonutrients

Dosage:- For soil application :- 500 gram per acre of crop through soil application

For foliar spray – 1.0 gram per litre

Product - Biostimulant



A-SIL -Plant Vitalizer -only one dose

- ❖ **One Single dose for Life cycle of the crop**
- ❖ It is a bioactive nano silica extract of a herbal based plant vitaliser and flower enhancer in liquid formulation.
- ❖ **Composition :** Extracts of Equisetum Hyemale & nano nutrients , and Excipient Q.S .
- ❖ The A-SIL can be sprayed at any stage of crop development, specially recommended at flowering stage.

Product Biostimulant



Crop yellow:- For crop turning yellow after rain or lack of nutrition or soil fungus etc

- ❖ It is composed of botanical extracts which takes care of nutrition deficiency and soil fungus problem.
- ❖ Composition :- Extract of Dulcamara Belladonna and equistem hymale ,excipient QS

Product – Immunity builder



NIVARAN Immunity Builder- Antifungal against soil Fungus

- ❖ Botanical, eco-friendly immunity builder against soil fungus.
- ❖ It is eco-friendly and human friendly.
- ❖ Validated at Agri Biotech Foundation Hyderabad , India. (Recognized as a Scientific and Industrial Research Organization by SIRO- Govt of India)
- ❖ Dosage :- 50 ml foliar spary in 150 litres of water per acre of crop (0.40 hectare)

Product Immunity Builder



TARGET Immunity Builder : - Against Sucking pest (white fly, aphid, etc)

- ❖ Botanical, eco-friendly immunity builder against sucking pest
- ❖ It is eco friendly and human friendly
- ❖ Foliar spray to be done on crop, after absorbing this solution, plant create secondary metabolites which strengthens the defence system against that pest.
- ❖ Validated by own –field trials , trial on thrips in process.
- ❖ Dosage :- 50 ml for 150 litre of water per acre of crop (0.40 hectare of crop)

Product Immunity Builder

Larvaego Immunity Builder(Patent No - 333488)

:- Against Fruit and Shoot Borer & helicoverpa species, cotton Bowllworm , rice stem borer



- ❖ **Botanical, eco-friendly immunity builder against borers. Its eco friendly plant based extracts Foliar spray to be done on crop,after absorbing this solution, plant create secondary metabolites which strengthens the defence system against that pest.**
- ❖ **Dosage :- 50 ml for 150 litre of water per acre of crop (0.40 hectare of crop)**

Product Immunity Builder



Tab Virus -Rakshak for TMV in chilli peeper

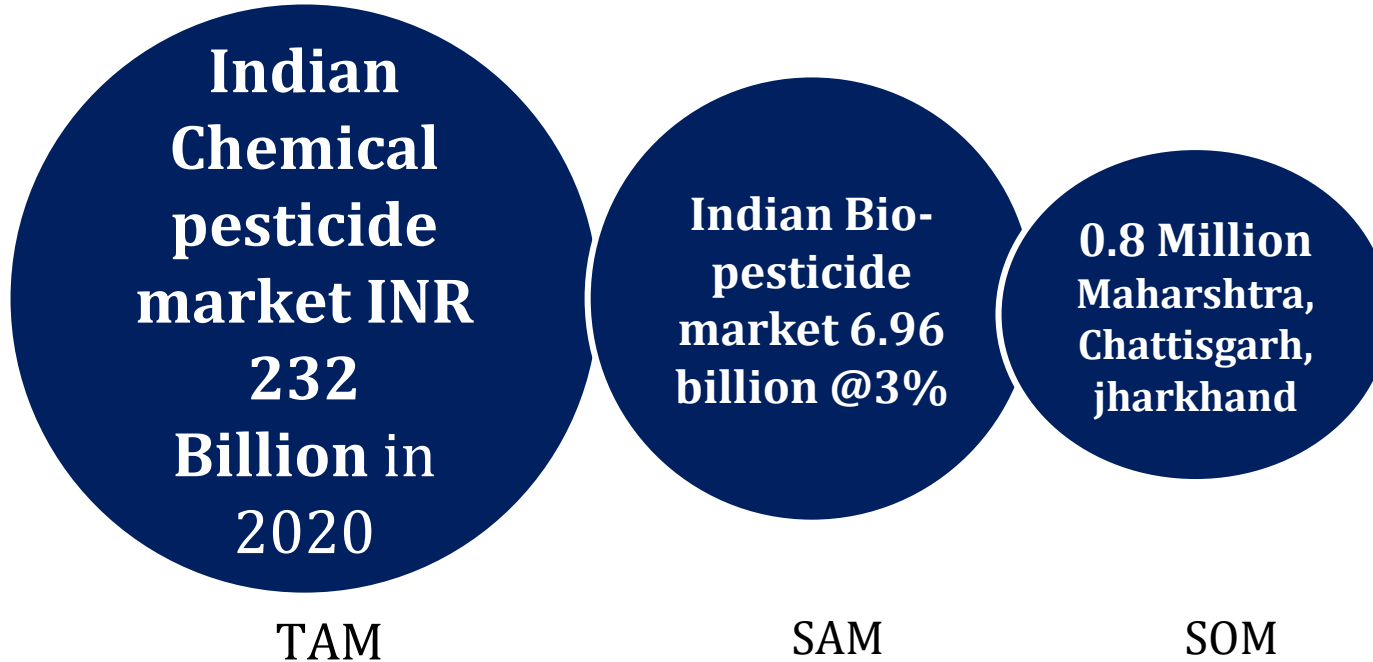
- ❖ **Botanical Eco friendly Immunity builder (preventive) against Tobacco Mosaic Virus (TMV) in chilli**
- ❖ **Extracts of Nicotina tabacum, Avena satva 30%,Alfa alfa,and Excipient Q.S**
- ❖ **Validated by own –field trials**
- ❖ **Dosage :- 50 ml for 150 litre of water per acre of crop (0.40 hectare of crop)**

Traction

Events	No. of units and litres	Gross Revenue in Rs lacs	Net Profits Rs
Launch in 2019-20	3600 no of bottles & 90 litres ,white label	8.65	62657
2020-21	152 liters bulk and 200 bottles	4.45	8000
2021-22	White label and bottles both	8.75	CA audit not done

Grant of Rs 10 lacs received from , Ministry of Agriculture and farmer welfare ,Govt of India under RKVY scheme, in the year 20-21

Got new market in Gujarat – MOU done for 22-23



Milestone Achieved

- Received Indian patent on fertilizer **Indian Patent No 326754, Date: 04/12/2019**
- Formulation and second patent on plant protector **Indian Patent No - 333488 Date : 28/02/2020**
- Shortlisted at Copenhagen Schools of Entrepreneur in Feb 2020 for incubation programme, at **Denmark**
- We were amongst 30 startups shortlisted by **Xynteo Exchange India 2019**
- Successfully completed incubation at IGKV-RABI, Raipur and received GOI Ministry Of Agriculture **Grant Rs 10 lakh through IGKV Raipur, India**
- Two product validation done at ABF Hyderabad, third product is under validation at **IGKV.**
- **“Best Innovative Agri Startup Award” at Agri Food Empowering India Awards November 2021.**

Recognition & Awards



“Best innovative agri start-up” at Agri-Food Empowering India Awards 2021 presented by Hon. Shri Prahlad Singh Patel, the Minister of State for Food Processing Industries and Jal Shakti,

Annual Report GOI (FY20-21)- Story Published



II. Agri startup success stories

Aditya Bioinnovation Pvt Ltd

Aditya Bioinnovation Pvt Ltd is an agritech startup having developed a patented nanofertilizer, Kohinoor & Sujalam, a proprietary & 100% natural formulation as a plant nutrients, growth regulator and health booster. The herbal formulation of this product is highly effective and needs a few drops to cater to a large area to protect crops against pests, fungus, viruses, insects etc. Post successful trials & product validation, the startup has partnered with marketing channels in B2B space and is gearing up for the B2C segment to ensure reach to a large number of farmers. Currently, the startup is generating revenue through channel partner sales (offline) which is the network of marketing associates operating in Maharashtra, MP and Rajasthan states.

Intech Harness Pvt. Ltd. (Maharashtra)

Intech Harness Pvt. Ltd. is an agritech company that has developed and patented an AI-driven and IoT-ready Farmer Obedient Motor Controller for electric water pumps to irrigate agriculture farms. Jalprayash Pump Controller - ensures water supply to the crop, irrespective of power timings. The startup has addressed the key challenge faced in water conservation i.e. a depleting water table, increasing farm yields through precise irrigation, convenience to farmers by eliminating undue manual effort in pump operation, helping increase farm income, eliminating extended pump operations. The key benefits of the technology are, it runs through an automatic setting, responds to disruptions on its own, adjusts water supply based on multiple parameters is capable of

cloud connectivity for data logging & analytics and no manual operation is required.

Prakriti O Prakritik Consumer Products Pvt. Ltd. (Odisha)

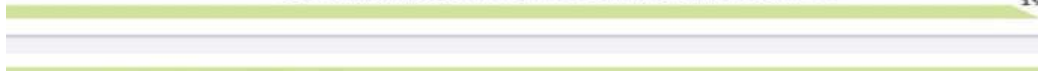
Prakriti O Prakritik Consumer Products Pvt. Ltd. has been established with an objective of manufacturing & marketing various FMCG, processed food and organic products. The startup manufactures and markets various tuber crop value-added products (under the brand name-TUBER) and provides consumers with more nutritious, value-added products for better living. The company strongly believes in catering to the rising global demand for tuber crop value-added products specially in Odisha.

Bhairaj Organics Pvt. Ltd. Rajasthan

Desigo is developing a unique and innovative cost efficient model for production of high quality A2 milk and delivering it through an end to end traceable model. It is evolving a robust ecosystem at remote villages for the production of high quality A2 milk in order to ensure end to end traceability. It has developed a model backed by technology which can track location, breed, quality and all transit details in real time. Currently the pilot projects are going on at several locations across Rajasthan. It not only ensures that farmer's income from dairy increases but also that the urban population gets high quality milk at very competitive prices. Its innovative model is very effective for restoring and developing indigenous cow breeds.

Hydro Greens Agri Solutions Pvt Ltd

Hydro Greens is a next generation solutions company based out of Bengaluru, who designs, installs and maintains Hydro Green fodder stations named "Kambala"



Annual Report 2020-21

DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS' WELFARE

Ministry of Agriculture & Farmers' Welfare

Government of India

Krishi Bhawan, New Delhi-110001

www.agricoop.nic.in

ANNUAL REPORT
2020-21



Xynteo - Mumbai -2019



**Shortlisted at Xynteo India Exchange program -Interacted with
Hon Padmashree Rajeshri Birla
(ADITYA BIRLA GROUP)**

Shortlisted CSE Copenhagen 2020



ABOUT US

PROGRAMMES

MENTORS

STARTUPS

EVENTS

COLLABORATIONS

BLOG

APPLY NOW

ABOUT STARTUPS

STARTUPS

TESTIMONIALS

VIDEO ARCHIVE

VISUALI



Turn-Ivy



AFRICA BUSINESS MATCH

SKITSEPROJEKT



OOMAY



IEI Young Engineer of the Year Award 2018



Sl.No. ...38(2).....


The Institution of Engineers (India)

Jharkhand State Centre, Ranchi

IEI Young Engineer of the Year Award

This is to certify that **Shri Partho Pratim Chatterjee**, M/s Aditya Binnoventions has been awarded "The IEI Young Engineer of the Year Award" for his significant contribution in the field of Engineering & Technology for the year 2017-18 during 58th Annual General Meeting held on 10th November, 2018 at Engineer Bhawan, Doranda, Ranchi.

We Wish him further success in his professional career.

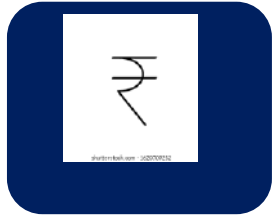

(MANIDA RAJANANDA KUMAR)
Honorary Secretary


(SANJAY SEN)
Chairman

Best Paper Award at CII – RGNIPM Nagpur 2018



Supports required for scale up



Current production capability is 50 litres/kg/ per day/ for each product. We need **marketing support** and investment of Rs 10-15 lakh / per product for **toxicity study & Field validation from Agricultural Institution -GOI** as per new notification 2021 . It will be implemented from 2023-24. Investment for infrastructure.



So we can

Built Infrastructure

Scale/refine Marketing and sales

Scale Customer service

Invest in product innovation

Provide residue free food to customers



Thank you
www.adityabioinnovation.in

