

## Karpagam Academy of Higher Education

### Department of Microbiology

#### Report of the Event

#### Entrepreneur Development webinar series-2 Report

#### Expertise Turn into Profit

30<sup>th</sup> July 2020

#### Participants : 100

Entrepreneur Development webinar series-2 report on “Expertise Turn into Profit” was successfully hosted by Department of Microbiology, Karpagam Academy of Higher Education with participation of people from life science disciplines from various institutions dated on 30th July 2020. The Department of Microbiology has plays a very important role in organizing entrepreneurial skill development programmes in online mode series. In the midst of lockdown, Microbiology department is well projected this entrepreneurship development webinar with international speaker **Mr. Vinoth Rayer, Technology Partner/Director, Al Saqr Agritech, L.L.C., Deira, Dubai, UAE**. The objective of this entrepreneurial development webinar programme is to motivate the student community for entrepreneurial career and to make him capable of perceiving and exploiting successful opportunities for enterprises. In this way the speaker, a trained entrepreneur can guide our students on how to start their own enterprise and approach various sectors in life science field. The programme started around 11:00 am by Dr. Usha, Prof and Head, Department of Microbiology, followed by welcome address has been given by Ms. Kavya, Final year student of Microbiology Department. The programme has been successfully organized by Dr. N. Sharmila Devi and Dr. R. Dinesh Kumar, Assistant Professors, Department of Microbiology along with the support of all other faculties.

The speaker is highly remarked that entrepreneurs are not necessarily born; they can also be developed through education, training and experience. He is a performance-driven Entrepreneur with a deep passion for sustainable technology and business. He is a motivated leader with strong organizational and prioritization abilities. Created and developed value-driven business advancements in the field of Insect Farming, Sustainable Agriculture, Animal Nutrition, Mushroom Farming and Livestock Management. The entrepreneurial experience is about 10+ years in the fields of Agritech, Biotechnology, Entomology and Lifesciences.

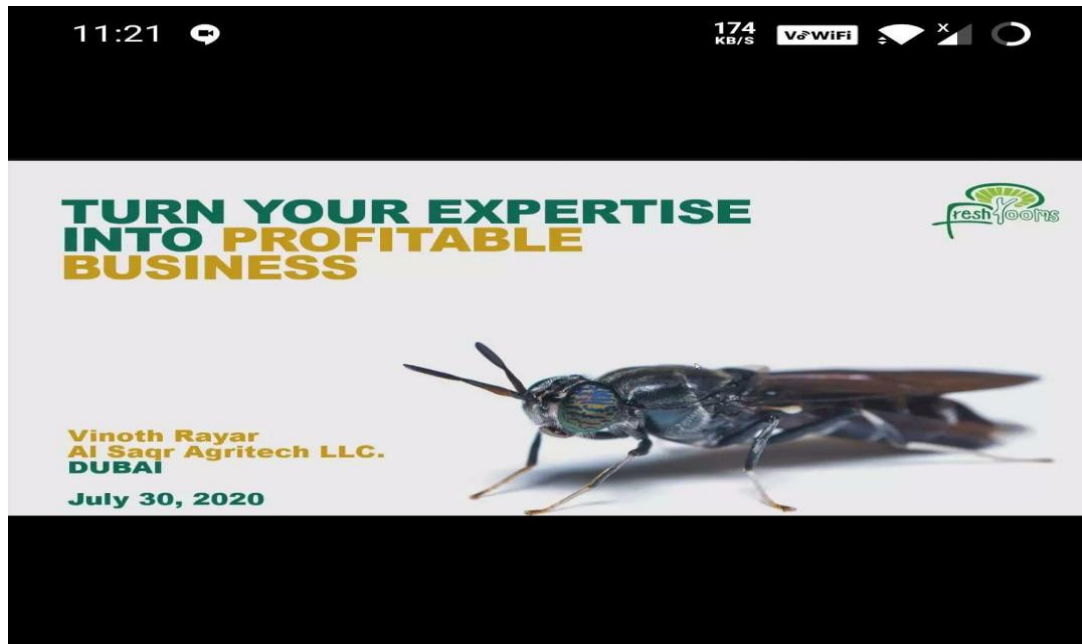
## Technologies Developed:

- Designed and developed climate-controlled rearing system for mass rearing of Black Soldier Fly under unnatural environment.
- Standardized the maximum growth kinetics of Black Soldier Fly Larvae on various organic waste streams including Human waste.
- Developed a unique model for Industrial production of y eggs under unnatural environment Formulated an insect based pure protein meal rich in lysine and DL-Methionine for monogastric animals and aqua farms.
- Formulation and development of RUTF (Ready-To-UseTherapeutic Food) for acute malnutrition and micronutrient deficiencies.
- Design and development of environment friendly loadbearing insulation panel from plant biomass.
- Insect behavioral chemistry: induced synomone secretion of insects against pathogens under unnatural condition

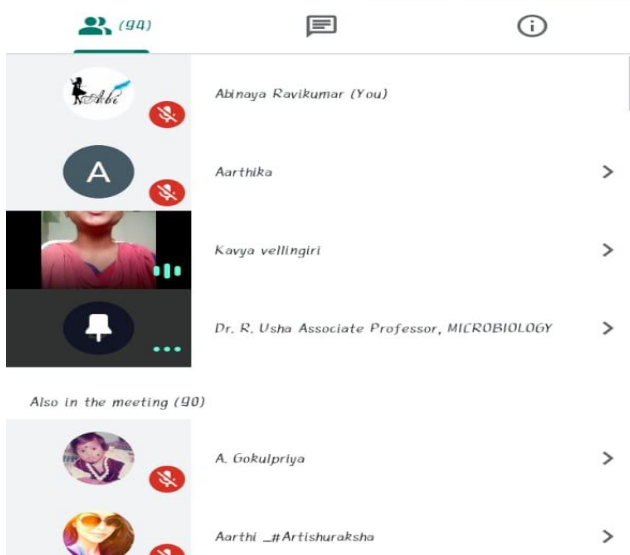
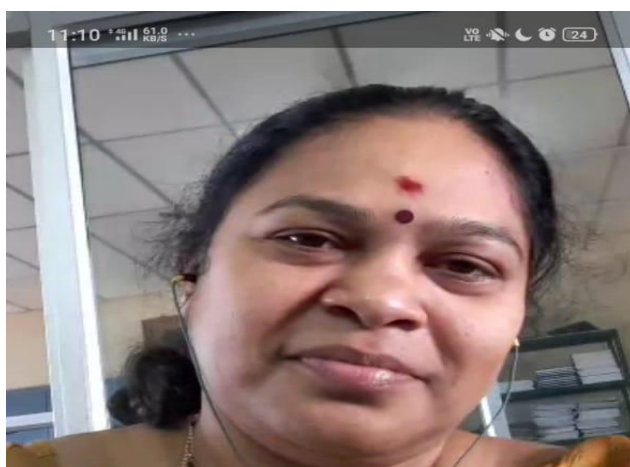
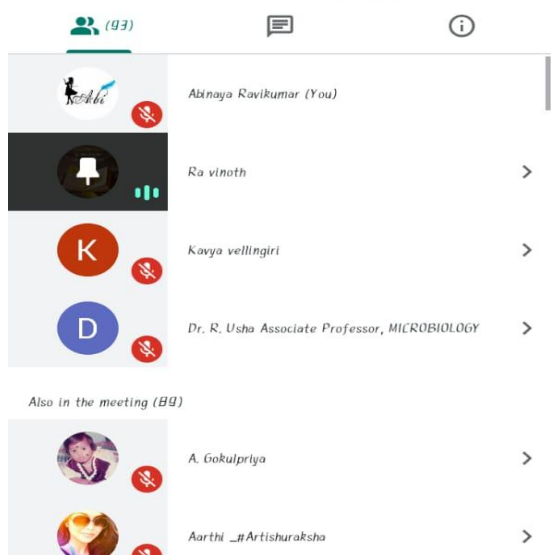
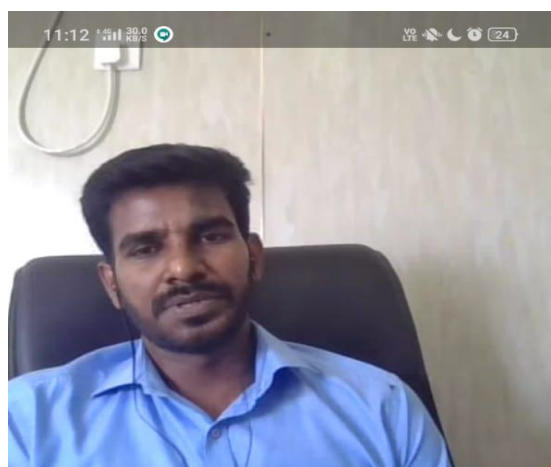
The business concepts were well explained in the following titles which include competitive advantage, competitive analysis, progress to date, start-up schemes in India, investors strategies, technology incubators, accessible crowdfunding links.

Thereafter Dr. N.Sharmila Devi, Assistant Professor, handled questioning session and conveyed to speaker. In the end, Ms. Dharshana Final year student, Microbiology Department gave the vote of thanks. Finally the event was concluded by Dr. R.Usha, Prof. & Head, Dept. of Microbiology. This programme has reached many students which extends much beyond ‘training’, **100** participants were registered for this event . It is an organized online mode training for enhancing the motivation, knowledge and skills of the potential entrepreneurs of near future. All the participants were provided with participation certificates followed by the successful completion of webinar event.

## Photos of the Event:




Program Inaugural




Welcome Address

11:53 32.1 KB/S V2WIFI


### COMPETITIVE ADVANTAGE




**FIRST TO INDIAN MARKET**  
India's 1<sup>st</sup> commercial edible insect farm




**ADVANCED BREEDING TECHNOLOGY**  
Minimized lifecycle, mass egg production, and high mating ratio




**UNIQUE FEEDSTOCK COMPOSITION**  
More than 10 types of waste categories is tried and tested



**HIGHER YIELD/SG/M**  
Maximum productivity in terms of protein, feed oil, and compost



**VERTICAL & INTEGRATED FARMING**  
Smart space utilization, and customized insect farming tech



**AFFORDABLE MARKET PRICE**  
Insect protein meal much lesser than fishmeal

11:55 531 KB/S V2WIFI

### COMPETITIVE ANALYSIS KEY DIFFERENTIATORS




NOTABLE COMPETITORS: AgriProtein, PROTIX, Enterra, Truist, innova

Key Differentiators	Frashrooms Lifesciences (PRLS)	Other Competitors
BSP Breeding under any climatic conditions	R&D mastered in BSP rearing at any climatic conditions by 2027	80% of our competitors are struggling in this area
BSP Mating Ratio	80%	65% - 75%
BSP Egg Hatching - Mortality Rate	10%	25-35%
Byproducts per ton of organic waste	110 Kg - 350 Kg of Protein Meal	100 Kg of Protein Meal
BSP Egg Production	950 - 1000 Eggs per Fly	500-850 Eggs per Fly
Automation Engineering	Prototype in progress	50% of the competitors have automation technology in engineering
Internet of Things - Smart & Connected Farming	Concept stage	Not started
Years of Expertise	5 years	Between 3 - 9 Years
R&D	Yes	Only 40% of the competitors have R&D
Edible Insects in Focus	Black Soldier Fly, Mealworm, Winged Termites, Cricket Fly, Silkworm	Black Soldier Fly, Cricket Fly, Mealworm

Power Point Presentation

11:43
50.8 KB/S
V8 WIFI

## BY-PRODUCTS FROM 1 TON OF WASTE

 PROTEIN MEAL
  NATURAL FERTILIZER
  FEED OIL

ORGANIC SUBSTRATE A
ORGANIC SUBSTRATE B
ORGANIC SUBSTRATE C

1 TON/DAY  
Organic Substrate (Net Weight)

Waste pre-treatment With desired conditions


Yields


125 Kg PROTEIN MEAL
200 Kg COMPOST
30 L FEED OIL

175 Kg PROTEIN MEAL
400 Kg COMPOST
45 L FEED OIL

280 Kg PROTEIN MEAL
350 Kg COMPOST
85 L FEED OIL

11:42
45.1 KB/S
V8 WIFI





### Benefits

- Rich N:P:K Value
- 100% organic and rich in nutrients and chitin
- High organic matter (>85%) with nitrogen and minerals
- Applicable at any stage of plant vegetation
- Responsible for the autoimmune response in plants
- Pollinators friendly
- Shelf life - 36 months

### Applications






- In soil amendments for farms, gardens, horticulture, and greenhouse.
- In low fertile soil (acid and sandy soil) with satisfactory results.
- In crop production for higher yields


Power Point Presentation

11:33 118 KB/s V2WiFi

## FRESHROOMS

### TECHNOLOGY FEATURES

-  MINIMIZED LIFE-CYCLE WITHIN 29-31 DAYS (EGG TO FLY)
-  INDUCED MATING, AND MASS PRODUCTION OF EGGS UNDER CONTROLLED CONDITIONS
-  OPTIMIZED TO WIDE GEOGRAPHICAL CONDITIONS
-  INSECT PHEROMONE CHEMISTRY
-  EFFICIENT PROCESSING & ENHANCED BIO-CONVERSION



11:23 108 KB/s

### EXECUTIVE SUMMARY


Freshrooms is an innovation-driven research Company with the focus to provide superior solutions in the field of Organic waste management, Sanitation, Edible insects farming, Livestock/Fish feed formulation, Insect protein quality management & control. Our team of experts backed by well-laid processes and cutting-edge technologies enable to solve world's two biggest challenges:

- To protect environment by reducing the organic waste in a socially responsible way
- To ensure feed and food security for a growing Livestock/Farmed fish population in a sustainable and cost-effective manner


Freshrooms believes food security can be improved by honoring nutrient upcycling using Insect larvae, enabling sustainable markets for protein sources, supporting livestock/aqua farmers and feed manufacturers, improving the animal nutrition, fostering cooperation between public and private sectors, and encouraging investment on mini-livestock farming.

Freshrooms have mastered Black Soldier Fly reproduction, mass production of eggs in artificial environment, and feeding customized models that enables development of industrial scale production of insects across geographies.


92



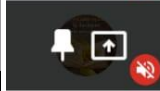
Atinaya Ravikumar (You)



Ra vinoth




Kavya vellingiri




Ra vinoth

Also in the meeting (88)



A. Gokulpriya



Aarthi \_#Artishuraksha

Power Point Presentation