

CONCEPTUAL AND THEORETICAL PORTRAITS OF THE INCUBATION ACTIVITIES OF VETERINARY INCUBATION FOUNDATION (VIF) @ TANUVAS

C.Soundararajan^{1*} and R.Vadivel²

*Veterinary Incubation Foundation (VIF) @ TANUVAS
Directorate of Centre for Animal Health Studies
Tamil Nadu Veterinary and Animal Sciences University
Madhavaram Milk Colony, Chennai – 600 051*

ABSTRACT

Incubation centers are providing office spaces, access to advanced laboratory setups, farm facilities, clinical spaces, and comprehensive mentorship encompassing technical, legal, and financial guidance to the incubatees. The activities of VIF @ TANUVAS regarding areas of interest of 62 incubatees, products and productization, grants, ideas, and awareness programs were analysed for the period from 2019 to 2023. Among the area of interest of the incubatees, most of the incubatees (85 %) are working in the domain of Veterinary while 15% of the incubatees are working in the area of life sciences. Among the Veterinary related ideas, the majority of incubatees are interested in doing research in the development of diagnostic kits 26.41%, followed by Feed and Feed supplements (24.52%) whereas life sciences-related ideas are majorly chosen for drug discovery. Out of 62 ideas, 23 products were developed with a percentage of 37.1. Out of these 13 incubatees, 5 received grants (38.46%) from the Government of India (Central funds), while the remaining 8 (61.54%) received funding from the Government of Tamil Nadu (State funds). The highest number (52.81%) of ideas obtained during the year 2023 followed by 27.3% during 2021, 10.45% during 2020, and 9.41% during 2022 with more ideas from Madras Veterinary College, Chennai. This study concludes that The outcome of the product is directly proportionate to their ideas.

Keywords: Incubation Centre, Area of interest, Products, Productization, Grants, Ideas

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¹Project Coordinator, Veterinary Incubation Foundation (VIF) @ TANUVAS and Director, Centre for Animal Health Studies, *Corresponding author Email id: drsoundarpara@gmail.com

²Chief Executive Officer, Veterinary Incubation Foundation @ TANUVAS

INTRODUCTION

Incubation centers are providing office spaces, access to advanced laboratory setups, farm facilities, clinical spaces, and comprehensive mentorship encompassing technical, legal, and financial guidance to the incubatees who come up with ideas (Carrol, 1986; Pathak Maulik, 2013). The foundation plays a crucial role in nurturing the growth and success of these startups by offering an ecosystem that fosters their development (Saravanan, 2007). Through its forward-looking approach, VIF@TANUVAS is not only driving advancements in the field of veterinary sciences but also contributing to the broader technological landscape by integrating cutting-edge technologies with the intricate demands of animal health and care. This paper reports the activities of the Veterinary Incubation Foundation @ TANUVAS.

MATERIALS AND METHODS

The "Veterinary Incubation Foundation (VIF) @ TANUVAS" was established at TANUVAS. The incubatees were inducted based on their idea and VIF @ TANUVAS helping them to provide facilities to develop their idea into products viz development of vaccines, diagnostic kits, and products. In addition to that conferences, workshops, and training programs were also conducted for the incubatees, faculties, and students. The activities of VIF @ TANUVAS

regarding areas of interest of 62 incubatees, products, and productization, grants, and ideas from students were analysed for the period from 2019 to 2023.

RESULT AND DISCUSSION

Area of Interest of Incubatees

The area of interest of 62 incubatees was analyzed and presented in Table 1. In this study, most of the incubatees (85%) are working in the domain of Veterinary while 15% of the incubatees are working in the area of life sciences. This may be due to the incubation center permits exclusively for veterinary-based innovations. Among the Veterinary related ideas, the majority of incubatees are interested in doing research in the development of diagnostic kits 26.41%, followed by feed and feed supplement (24.52%), IoT (15.09%), milk and milk products (13.20%), waste management (5.66%), vaccine development (3.77%), drug discovery is (1.88%) and Others (9.43%). The highest preference for the development of diagnostic kits and feed and feed supplements by the incubatees and this may be due to the availability of substantial markets.

In contrast, the less number of incubatees with ideas like drug discovery and development of as vaccines for veterinary-based problems may be due to various procedures such as regulatory approvals, clinical trials, and different assays, licensing

Table 1. Working domain by Incubatees

Domain	Number of incubatees working in the area of			
	Veterinary - %		Life science - %	
Vaccine Development.	02	3.77%	01	11.11%
Diagnostic kits	14	26.41%	02	22.22%
Drug discovery	01	1.88%	04	44.44%
Feed and Feed supplements	13	24.52%	-	-
Milk and Milk products	07	13.20%	-	-
IoT	08	15.09%	-	-
Waste Management	03	5.66%	01	11.11%
Others	05	9.43%	01	11.11%
Total	53		09	

*Parenthesis indicates Percentage

Table 2. Products and Productization ratio of Incubatees of VIF @ TANUVAS

Products	No of Incubatees	No. of Products	Productization %
Vaccine development	03	0	0.0%
Diagnostic kits	16	10	62%
Drug discovery	05	02	40%
Feed and Feed supplements	13	3	23%
Milk and milk products	07	5	71%
IoT	08	2	25%
Waste Management	04	01	25%
Others	06	0	0%
Total	62	23	37.1%

Table 3. Funds received by startups for their ideas

Domain	Fund in lakhs	Incubatee	Total fund circulated lakhs
IVP A	2.00	04	8.00 Lacs
IVP B	5.00	02	10.00 Lacs
BIG	49.00	04	196.00 Lacs
TANSEED	10.00	02	20.00 Lacs
Nidhiprayas	2.50	01	2.50 Lacs
Total			236.50 Lacs

consumes considerable time to shape the products, resulting in less interest in drug discovery and vaccine development compared to other fields. The less number of incubatees with vaccine development may be due to the complexity of viruses, bacteria, and parasites, and also very difficult to standardize the production procedures (Jorge and Dellagostin, 2017; Thomas *et al.*, 2022). Development of drug discovery is not an easy task, since it is time-consuming (6-9 years), and involves pre and post-clinical trials, and cost involvement (Hittalamani *et al.*, 2022). In life sciences, 44.4% incubatees with an idea of drug discovery followed by 22.2% with the diagnostic kit and each 11.1% with vaccine development, waste management, and others. In the life sciences, more number of people

with drug discovery may be due to the development of ethnoveterinary herbal-based drugs. The development of herbal-based drugs is easy to get relevant plant materials and easy to complete with a minimum laboratory facility. Verma and Singh (2008) reported that the development of herbal drugs was safe and easy to administer and the less cost involved.

Productization

Out of 62 ideas, 23 products were developed with a percentage of 37.1 (Table 2). Out of 23 products, 71.43% were milk and milk products, followed by 62% of diagnostic kits and 40% of drug discovery, 25% IoT and waste management, and 23% of feed and feed supplements. This

Table 4. Veterinary-related ideas from Students of TANUVAS

Constituent Colleges	Number of ideas					Total
	2019	2020	2021	2022	2023	
Madras Veterinary College, Chennai	0 (0.0)	57 (33.33)	111 (24.83)	110 (71.42)	145 (16.78)	423 (25.85%)
College of Food and Dairy Technology (CFDT), Koduvalli	0 (0.0)	06 (3.5)	54 (12.08)	0 (0.0)	66 (7.63)	126 (7.7%)
Veterinary College and Research Institute (VC&RI), Namakkal	0 (0.0)	27 (15.78)	80 (17.89)	08 (5.19)	175 (20.25)	290 (17.72%)
Veterinary College and Research Institute (VC&RI), Orathanadu	0 (0.0)	19 (11.11)	67 (14.98)	08 (5.19)	87 (10.06)	181 (11.06%)
Veterinary College and Research Institute (VC&RI), Tirunelveli	0 (0.0)	12 (7.01)	58 (12.97)	07 (4.54)	94 (10.87)	171 (10.45%)
College of Poultry Production and Management (CPPM), Hosur	0 (0.0)	13 (7.60)	24 (5.36)	0 (0.0)	46 (5.32)	83 (5.07%)
Veterinary College and Research Institute (VC&RI), Salem	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	50 (5.78)	50 (3.05%)
Veterinary College and Research Institute (VC&RI), Udumalpet	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	79 (9.14)	79 (4.82%)
Veterinary College and Research Institute (VC&RI), Theni	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	62 (7.17)	62 (3.78%)
Arts and Science Colleges, Chennai	0 (0.0)	37 (21.63)	53 (11.85)	21 (13.63)	60 (6.94)	171 (10.45%)
Total	0 (0.0)	171 (10.45)	447 (23.32)	154 (9.41)	864 (52.81)	1636

study indicates that, there were no products obtained from the ideas of the incubatees like vaccine development and others. This reveals the development of a vaccine is not easy because of the complexity of organisms, cost involvement, and sophisticated laboratory is need. This is similar to the report of Jorge and Dellagostin (2017).

Grants received by incubatees

Out of 62 incubatees at VIF@ TANUVAS, 21% of the incubatees have successfully secured a diverse range of grants tailored for startups, including programs such as the Innovative Voucher Program (IVP) A & B, Tamil Nadu Seed Fund Scheme (TANSEED), Biotechnology Ignition Grant (BIG), Nidhi Prayas etc.

It is evident that among 62 incubatees, a noteworthy subset of 13 (21%) have successfully secured funding totaling 236.50 lakhs from a range of funding agencies (Table 3). Out of these 13 incubatees, 5 received grants (38.46%) from Government of India (Central funds), while the remaining 8 (61.54%) funding from Government of Tamil Nadu. The reason for more grants from state government may be due to less amount sanctioned than central grants which is similar to the report of Thomas (2020).

Ideas from Students

The veterinary-related ideas from the students of 9 constituent colleges TANUVAS were obtained and presented in Table 4. The table revealed the highest number (52.81%) of ideas obtained during the year 2023 followed by 27.3% during 2021, 10.45% during 2020, and 9.41% during 2022. No ideas were obtained during the year 2019. This may be due to the absence of students in the college because of the COVID-19 pandemic. The highest number of ideas obtained during the year 2023, may be due to continuous organizing of training programs namely Tech-BCCI, Ideathon, and internship programs for the students. Among the college-wise ideas, the maximum (25.85%) number of ideas was obtained from Madras Veterinary College, followed by 17.72% from VC&RI, Namakkal, 11.06% from VCRI, Orathanadu, each 10.45% from VCRI, Tirunelveli and Arts & Sciences College, 7.70% from CFDT, Koduvalli, 5.07% from CPPM, Hosur, 4.82% from VC&RI, Udumalpet, 3.78% from VC&RI, Theni, 3.05% from VC&RI, Salem. The maximum number of ideas from Madras Veterinary College, Chennai may be due to more number of student participants than other constituent colleges. The same trend was observed in VC&RI, Namakkal, VC&RI Orathanadu, and VC&RI, Tirunelveli since

the medium number of students strength in each college and less number of ideas obtained from other colleges indicates less number of student participants.

CONCLUSION

This study concludes that the majority of incubatees choose veterinary-related ideas than life sciences. Among the veterinary-related ideas, incubatees have chosen development of diagnostic kits, feed, and feed supplements. It clearly reveals that a greater number of products are feed and feed supplements and diagnostic kits. Among the ideas towards the life sciences indicated that the incubatees have chosen drug discovery ideas and in turn more products were from these ideas. The outcome of the product is directly proportionate to their ideas. The majority of the incubatees are not chosen for veterinary-related ideas like vaccine development and drug discovery because of diversified challenges.

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