



## A quitaine – Karnataka collaboration Scientific Project for Pre- PhD student exchange

### Scientific Proposal

Project	Semi-synthetic diet for healthy rearing of silkworm <i>Bombyx mori L.</i> enabling to develop poultry feed, aqua feed, nutraceuticals and biomaterials
Scientific Domain	Biotechnology/ Environmental/Clean Technology/Nutrition
Summary	<p>Artificial diet for insects are essential in order to understand the lifecycle, behavior, feeding habits and susceptibility &amp; resistance to the controlling agents.</p> <p>These diets are expected to maximize the insect growth by meeting/surpassing their nutritional requirement. We have developed a novel low cost artificial developed artificial diet for rearing silkworm.</p> <p>Annual report of the CSB (Central Silk Board) reveals the total mulberry cultivation has decreased by 18.9 % due to the rising cost of the land/uneconomical cultivation.</p> <p>Silkworms were traditionally used only for making silk fabric. Off late, Silk industry is being exploited for various byproducts</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Silk fibroin is used for various biomedical application such wound healing, development of biological scaffolds etc.</li> <li>• Silk-Sericin which is usually discharged as a waste is being used as a replacement of fetal bovine serum &amp; as an active ingredient in cosmetics etc.</li> <li>• Silkworm pupa which amounts to 80 % of the total waste discharged is used for producing omega-3 fatty acids supplements, poultry feed and aqua feed</li> <li>• Silkworm is also used as a model organism.</li> <li>• In spite, of immense benefits it is not widely exploited in advanced countries like France due to non-availability of mulberry leaves in the vicinity of research laboratories.</li> </ul> <p>Through this project we propose an artificial diet which can be used to rear silkworms in any place where there is scarcity of land, labor and water. This project can revive Sericulture in France, which was once the highest producer of silk in the world ( 16th Century)</p>
Student Profile wished	Biochemistry,/Biotechnology/ Sericulture/ Biomedical/ Food Technology
Supervisor name	Srinivas B V
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Institute/Laboratory /Industry	Aspartika Biotech Pvt Ltd
Director of the instate/ Laboratory	Srinivas B V
Time & Duration	2-4 months

of the project (range)	
Representative Reference	<p>1) Evaluation of Nutritional Composition of Hybrids of Waste Silkworm Pupa Bombyx Mori L As A Potential Raw Material For Poultry Feed- A Sustainable Technology For Future. Srinivas V. Bandlamori, Mousumi Mondal, C Rajendra Singh, Ashwini M. Karkada, Vol.1 - Issue 10 (December - 2012)</p> <p>2) The silk proteins, sericin and fibroin in silkworm, Bombyx mori Linn., - a review, M. Mondal*, K. Trivedy and S. Nirmal Kumar Caspian J. Env. Sci. 2007, Vol. 5 No. 2 pp. 63-76</p>

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