**VINSTROM - Report of work done for the Year 2019**

Dr. T.S. Suryanarayanan was selected to function as Consultant, Centre for Next Generation Technologies in Adaptive Agriculture in ICAR and World Bank funded *Microbiome enabled seed priming project* – University of Agricultural Science, GKVK, Bangalore, India.

**Suryanarayanan functioned as a Resource Person in the following meetings:**

* Delivered an invited talk at the National Symposium on Natural Products for Human Health, Entomology research Institute, Loyola College, 07.02.2019.
* Delivered Prof. Babuji Endowment lecture in the Department of Plant Biology & Plant Biotechnology, Loyola College, 21.02.2019.
* Resource Person in workshop conducted by ICAR- Centre of Advanced Agricultural Science & Technology (CAAST), University of Agricultural Science, GKVK, Bangalore, 28.03.2019.
* Delivered Invited lectures on Research Paper Writing in a workshop conducted by Current Science Association at National Centre for Polar and Ocean Research (NCPOR), Goa, 25.05.2019.
* Delivered lead lecture in a symposium on Endophytes and their applications, University of Agricultural Science, GKVK, Bangalore, 24.09.2019.
* Delivered an invited lecture on *Fungal endophytes: concerted efforts needed for realising their technological potential* at The Initiative for Biological Systems Engineering (IBSE) seminar, IIT Madras, 09.05.2019.
* Delivered invited lecture at the 46th meeting of the Mycological Society of India, School of Life Science, Pondicherry University, 07.11.2019.
* Resource person, Workshop on Endophytes – Bangalore Agriculture University, 27-28, September 2019.
* Invited lecture on Research Ethics at a workshop conducted by Centre for Next Generation Technologies in Adaptive Agriculture in ICAR and World Bank funded *Microbiome enabled seed priming project*, Bangalore Agriculture University, 20.11.2019.
* Conducted hands on training for research students of Bangalore Agriculture University on isolation and characterization of endophytes, 10-12, December 2019.
* Delivered an invited lecture “A trip to the Amazon” at Bharathi Women's College, BOT-FEST, 16.12.2019".
* Lecture on Improving Curriculum, Department of Life Science, Manipur University, 18.12.2019.

**Govindarajulu functioned as a Resource Person in the following meeting:**

* Hands on training for research students of Bangalore Agriculture University on isolation and characterization of endophytes, 10-12, December 2019.

**Research Publications**

According to Google Scholar, our papers have been cited **460+** this year.

* Suryanarayanan T.S. (2019). Repository of fungal endophytes at VINSTROM, Chennai: waiting to be harnessed. *Current Science* 117: 1469:1474.
* Karaba N. Nataraja, T. S. Suryanarayanan, R. Uma Shaanker, Muthappa Senthil-Kumar, Ralf Oelmuller. (2019). Plant–microbe interaction: prospects for crop improvement and management. *Plant Physiology Report* 24: 461–462.
* Suryanarayanan T.S. (2019). Endophytes and weed management: a commentary. *Plant Physiology Report* 24: 576–579.
* Suryanarayanan, T.S. (2019). Endophytes in agriculture. Meeting Report. *Current Science* 117: 1420-1421.
* Hyde, K.D., *et al.* (2019). The amazing potential of fungi: 50 ways we can exploit fungi industrially. *Fungal Diversity*: 1-136.

**Abstracted Presentations in National & International Seminar/Symposia**

* Judith Loogen, Ville Pihlajaniemi, Anna Borisova, Suryanarayanan TS, Priit Valjamae and Jochen Büchs. 2019. Novel-inhibitor resistant lignocellulolytic enzymes from Indian fungal resources - Poster Presented at the BioProcessing Days 2019, Westfälische Hochschule, Recklinghausen, Germany. 18-20 February 2019
* Ville Pihlajaniemi, Anna Borisova, Nina Aro, Klaus Niemelä, Suryanarayanan TS, Rajamani T, Riin Kont, Priit Valjamae, Kaisa Marjamaa and Kristiina Kruus. 2019. IndZyme: Novel-inhibitor resistant lignocellulolytic enzymes from Indian fungal resources - Poster Presented at the National New Energy Programme Seminar, VTT Technical Research Centre of Finland, Helsinki, Finland. 28 March 2019
* Anna Borisova, Ville Pihlajaniemi, Riin Kont, Klaus Niemelä, Nina Aro, T.S. Suryanarayanan, Kaisa Marjamaa, Priit Väljamäe, Kristiina Kruus 2019. Effect of soluble phenolic compounds from hydrothermally pretreated wheat straw on cellulose hydrolysis - Presented In 15th International Conference on Renewable Resources & Biorefineries (RRB15), 3-5 June 2019, Toulouse, France.
* Rajamani T, Venkatachalam A, Govinda Rajulu MB, Thirunavukkarasu N, Suryanarayanan TS (2019) – Fungal endophyte metabolites kill plants: a source of weedicidal compounds? at Department of Crop Physiology, University of Agricultural Sciences, GKVK, Bangalore, Karnataka, India. 24-26 September, 2019.
* Thirunavukkarasu N, Govinda Rajulu MB, Shravanakumar SS, Tanveer Kaur, Reddy MS, Suryanarayanan TS (2019). Endolichenic fungi of lichens of the southern Western Ghats - Poster Presented in National conference on Recent Advances in Biodiversity, Biology and Biotechnology of fungi & 46th Annual Meeting of Mycological Society of India held at Depart of Biotechnology, Pondicherry University, 07-09 November, 2019

**Ongoing project:**

|  |  |  |
| --- | --- | --- |
| **Title** | **Funded by** | **Amount** |
| IndZyme: Novel inhibitor-resistant lignocellulolytic enzymes from Indian fungal resources | Department of Biotechnology, under INNO INDIGO call (Innovation-driven Initiative for the Development and Integration of Indian and European Research with partners from Finland, Germany and Estonia)May 2017-May 2020 | **Rs.40.95 lakhs** |

**Visitors to VINSTROM:**

Dr. Sam Kuruvilla, Senior Research Scientist and Dr. P. Karthick, Research scientist, Sea6 Energy Private Limited, Bangalore.

Dr. Mahesh Sonawane and his group, National Centre for Microbial Resource (NCMR), National Centre For Cell Science (NCCS), Pune.

Dr. Pramod Shinde, Senior Scientist,CSIR-Central Salt and Marine Chemicals Research Institute (CSMRI), Bhavnagar.