



Dr. Sumit Singh Dagar

Scientist D

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Research Area

- The research group is interested in studying diversity, ecology and taxonomy of various anaerobic microorganisms (bacteria, fungi, methanogens) from different habitats for their potential exploitation in various fields like ligno-cellulose degradation, bio-fuel production, and other industrial applications.
 - They use conventional, molecular biology and bioinformatics tools to isolate, characterize and identify these microbes. In addition, they screen them for their efficient enzymatic system for industrial applications.
 - The group is also interested in maintaining and supplying anaerobic cultures to interested research institutions and universities.
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Education & Scientific Career

- Visiting Academic Researcher (2012) at IBERS, Aberystwyth University, Wales (UK)
 - Research Associate (2011-2012) at National Dairy Research Institute, Karnal (India)
 - PhD in Dairy Microbiology (2011) from National Dairy Research Institute, Karnal (India)
 - MSc in Microbiology (2007) from Kurukshetra University, Kurukshetra (India)
 - BSc in Life Science (2005) from Hindu College, Sonapat (India)
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Awards

- Research fellowship awarded by ICAR (Indian Council of Agricultural Research), India
 - Awarded "The Stapledon Memorial Trust" Fellowship at IBERS, Aberystwyth University, Wales, UK
 - Awarded "FEMS Young Scientist Meeting Grant (YSMG)" to assist in attending FEMS meeting 2012-09
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Funding & Collaborators

- Research funding is provided by Agharkar Research Institute for in-house projects (MIC 32 and MIC 10) on “Mining the anoxic ecosystems for efficient fibrolytic microbes” and “Culture Collection”

Publications and patents

1. Dagar SS, Singh N, Goel N, Kumar S and Puniya AK (2014) Role of anaerobic fungi in wheat straw degradation and effects of plant feed additives on rumen fermentation parameters in vitro. *Beneficial Microbes*. 12: 1-8
2. Gruninger RJ, Puniya AK, Callaghan TM, Edwards JE, Youssef N, Dagar SS et al. (2014) Anaerobic fungi (phylum Neocallimastigomycota): advances in understanding their taxonomy, life cycle, ecology, role and biotechnological potential. *FEMS Microbiology Ecology*. 90: 1-17. DOI:10.1111/1574-6941.12383.
3. Kumar S, Choudhury PK, Carro MD, Griffith GW, Dagar SS, et al. (2014) New aspects and strategies for methane mitigation from ruminants. *Applied Microbiology and Biotechnology* 98: 31-44.
4. Sirohi SK, Choudhury PK, Dagar SS, Puniya AK and Singh D (2013) Isolation, characterization and fibre degradation potential of anaerobic rumen fungi from cattle. *Annals of Microbiology*. 63:1187-1194
5. Kumar S, Dagar SS and Puniya AK (2013) Changes in methane emission, rumen fermentation and microbial groups in response to diet and microbial interactions. *Research in Veterinary Science*. 94:263-268
6. Sirohi SK, Singh N, Dagar SS, and Puniya AK (2012) Molecular tools for deciphering microbial community structure and diversity in rumen ecosystem. *Applied Microbiology and Biotechnology*. 95:1135-54
7. Dagar SS, Kumar S, Mudgil P, Singh R and Puniya AK (2011) D1/D2 domain of large subunit rDNA for differentiation of *Orpinomyces* spp. *Applied and Environmental Microbiology*. 77: 6722-6725
8. Kumar S, Dagar SS and Puniya AK (2011) Isolation and characterization of methanogens from rumen of Murrah buffalo. *Annals of Microbiology*. 62:345-350