

Status Report of MOU between CURAJ, India and UANL, Mexico (MOU signed on July 28, 2015)

The MOU was signed with the following objectives:

- ✓ Teacher exchange, guest teachers, of students for development of programs, seminars, collaborative research networks, joint projects in areas of common interest of the parties.
- ✓ Projects of bilateral and multilateral scientific research
- ✓ Organization of seminars, symposia, and joint research.
- ✓ Scholarship programs and academic activities for achieving academic levels of postgraduate Masters level, PhD and Postdoctoral.
- ✓ Exchange of plans, programs, study materials, scientific and technical information and
- ✓ audiovisual materials.
- ✓ Development of scientific publications in national and international recognition journals.
- ✓ Promotion of exchange programs for students and teachers, favorability for this population.
- ✓ Use of Resources: Share, according to existing regulations in each institution, physical and
- ✓ laboratory resources, information and documentation, logical and human support resources available, according to work plans and projects of mutual interest to be agreed in the specific contracts to be signed by the two entities.
- ✓ Advice: Provide advice in areas that the two institutions require, subject to application of the parties and within specific contracts.

An year wise details of this scientific and technological cooperation is presented below:

2015-2016

Scholarship

1. 2016 Mexican government scholarship program for international students- Research scholar Mr.Shardendu Kumar (Supervisor- GarimaKaushik) was selected on **December 2, 2015** for pursuing partial research in UANL under this scheme for one year (*however, the student could not join due to unavoidable personal reasons*)

Publication

1. Kumar, S., **Kaushik, G.** and Villarreal-Chiu, J.F., 2016. Scenario of organophosphate pollution and toxicity in India: A review. *Environmental Science and Pollution Research*, 23(10), pp.9480-9491.

2016-2017

Project

Indo-Mexico bilateral project (DST-CONACYT Project Number: INT/MexicoP-04/2016), entitled “Design of a microbial process for the removal of organophosphorus pesticides in water supplies from rural and urban water bodies” (PI- GarimaKaushik)Sanctioned in **September 2016, Fund received in May 2017 by DST (14.88 lacs)**

Publication

1. Juan Francisco V. Chiu, Alejandra G. A., Kumar S., **Kaushik G.** Biological Limitations on Glyphosate Biodegradation, *Green Technologies and Environmental Sustainability* 2017, pp 179-201

Exchange visits(under project)

1. Dr Juan Francisco Villarreal Chiu, Research Professor, Av. Universidad S/N. San Nicolás de los Garza, Nuevo León. México. 66451, +52 818329-4000 ext. 6367 ,juan.villarrealch@uanl.edu.mx

2. Alejandra Guadalupe, Research student, Av. Universidad S/N. San Nicolás de los Garza, Nuevo León. México. 66451
Period of Visit: 11.4.2017 To: 8.5.2017

2017-2018

Publication

1. Kumar, S., **Kaushik, G.**, Dar, M.A., Nimesh, S., Lopez-Chuken, U.J. and Villarreal-Chiu, J.F., 2018. Microbial degradation of organophosphate pesticides: a review. *Pedosphere*, 28(2), pp.190-208.

Presentation of work in conference/seminar

1. Kritika Sharma and Garima Kaushik: Presented paper on “Biodegradation of organophosphorous pesticide contaminated soil by bacteria in Rajasthan” in National Seminar on Forest, Water and Climate change on 21 March, 2018 held at IGC for HEEPS University of Rajasthan, Jaipur .
2. Mohd Ashraf Dar and Garima Kaushik: Poster Presented on “Isolation and screening of organophosphate pesticide degrading bacteria” in International Conference on Emerging Trends in Biotechnology for Waste Conversion (ETBWC) 2017 -XIV Annual Convention of The Biotech Research Society (BRSI), India Organized by CSIR-National Environmental Engineering Research Institute (NEERI), Nagpur Maharashtra held during October 8-10, 2017
3. Mohd. Ashraf Dar and Garima Kaushik: Poster presented on “Biodegradation of Organophosphate Pesticides Under Semi-Arid Condition of Rajasthan” in VI Rajasthan Science Congress, 2018, Central University of Rajasthan, Ajmer, India during October 13-15, 2018.
4. Martinez-Ledezma, C., Rojas-Verde, M.G., López-Chuken U.J., Kaushik, G., Nimesh, S. Villarreal-Chiu, J.F. :Poster Presented on P insensitive biodegradation of glyphosate by a native *Bacillus cereus* strain isolated from northeast Mexico in VI Rajasthan Science Congress, 2018, Central University of Rajasthan, Ajmer, India during October 13-15, 2018.

Exchange visits (under project)

1. Ms. Kritika Sharma, Research Scholar, Department of Environmental Science, School of Earth Sciences, Central University of Rajasthan,

Period of Visit: 15.1.18 To: 04.02.18

2018-2019

Publication

1. Acosta-Cortés, A.G., Martinez-Ledezma, C., López-Chuken, U.J., **Kaushik, G.**, Nimesh, S. and Villarreal-Chiu, J.F., 2019. Polyphosphate recovery by a native *Bacillus cereus* strain as a direct effect of glyphosate uptake. *The ISME journal*.

Exchange visits (under project)

1. Cesar Martinez Ledezma Master's student, Av. Universidad S/N. San Nicolás de los Garza, Nuevo León. México. 66451

Period of Visit: 10.10.2018 To: 9.11.2018

2019-2020

Publication

1. Dar, M.A., **Kaushik, G.** and Villarreal-Chiu, J.F., 2019. Pollution status and bioremediation of chlorpyrifos in environmental matrices by the application of bacterial communities: A review. *Journal of Environmental Management*, 239, pp.124-136.
2. MA Dar, **Kaushik G.**, JFV Chiu Pollution status and biodegradation of organophosphate pesticides in the environment *Abatement of Environmental Pollutants*, 2020, pp 25-66. **Publisher: Elsevier**