



# N A P A

## Association of Nepalese Agricultural Professionals of Americas Proudly Announces the 12<sup>th</sup> Talk Session (Webinar) On Sprayable Biodegradable Polymer Platform Technology for Agriculture Applications

BY: **Raju Adhikari, Ph.D.**

**When: Saturday, March 30, 2019**

**Time: 9:00pm US EST (1:00pm, Sunday, Australia)**

**How to Join the Session?**

Join from PC, Mac, Linux, iOS or Android: <https://zoom.us/j/176995717>

**Telephone:** Dial: +1 669 900 6833 or +1 646 876 9923, **Meeting ID: 671 014 604**

**Find your local number: <https://zoom.us/j/176995717>**

Respected NAPA members  
& beyond

Greetings!

We cordially invite you to attend the upcoming NAPA's 12<sup>th</sup> talk session. Please do not miss the opportunity to interact in a live discussion forum on 'Sprayable Biodegradable Polymer Platform Technology for Agriculture Applications'. Join us to add value on our collective strength & resource pool.

Together, we can make a difference.

Respectfully,

Lila K. Khatiwada, PhD  
Chair,  
Talk Session (Webinar)  
Committee

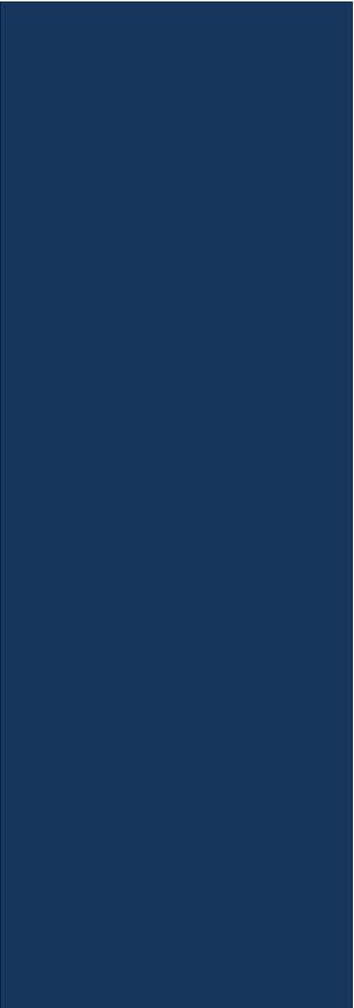
### Talk Summary:



Preformed plastics have been widely used as a mulch film to reduce soil evaporation, promote early germination, increase yields and reduce nitrogen leaching. Societal pressures have however led to the phase out of LDPE and oxo-biodegradable plastics due to their non-degradable nature and associated toxicity. Biodegradable, bio-based and compostable preformed and sprayable plastics are now viewed as more attractive alternatives, although the cost of biodegradable polymers is still a challenge. We have recently reported a novel water-dispersible sprayable polymer formulation (PF) that has high membrane efficacy for reducing soil evaporation and weed growth. The PF is stable at ambient temperature and can be sprayed using existing farm equipment. The pot and field trial showed the polymer membrane treatment maintained same crop yield to control with 28% less irrigation water. The PF is also been used as a coating for the control and synchronize release of nutrients.

Dr. Raju Adhikari will present an overview of water dispersible sprayable biodegradable polymer platform technology (TranspirationNal and SynFert) and results of pot and field trials on soil water evaporation, weed growth and degradation. Nepal soil and crop productivity have been declining due to excess use of fertilizers and chemicals and causing long term environmental problems. Dr. Adhikari would like to seek feedback on the relevance and applicability of such technologies in Nepal for potential applications in mulch, coatings, dust suppressant, and prevent soil erosion.

Speaker's Bio: Dr. Adhikari worked as a principal research scientist at CSIRO Manufacturing and currently working as principal scientist in a start-up company Bio-Ra Co Ltd and holds an adjunct position at RMIT University, Melbourne, Australia. He did Ph.D. in Synthetic organic chemistry from Delhi University, Post-doctoral studies at CSIRO and University of Hohenheim, Germany. He holds 28 patents, 5 book chapters and over 100 peer review papers. His current and past research includes development of polymers for biomedical, tissue engineering, agriculture, food and OLED applications. He is a co-inventor of two biomedical family of polymers Elast-Eon<sup>TM</sup> and NovoSorb<sup>TM</sup> and inventor of Transpirational and SynFert technologies. His research are published in Q1 journals and has supervised several PhD students. He is



the founding chair of NRNA ICC SKI Committee, co-chair of NRNA Academy and a visiting scientist to RECAST,TU.