NEEM COATED UREA: USES AND BENEFITS
Dinesh Kumar

Out of 17 nutrients essentially required by crop plants for their normal growth and reproduction, nitrogen (N) is generally required by them in the largest quantities. Urea is one of the most widely used source of fertilizer N in the world. It also has a high nitrogen content (46%), in comparison to many other popular nitrogen sources. When applied to soil, urea is first transformed into ammonical (NH₄⁺) form after its hydrolysis and then to nitrite (NO₂⁻), followed by to nitrate (NO₃⁻) form by the process of nitrification. Most of the crop plants use nitrate as a source of nitrogen except rice which prefers ammonical form over the nitrate. Though nitrification is a necessary phenomenon for making nitrogen available to crop plants, but the rapid nitrification is one of the key processes that encourages Nitrogen losses from the soil. This leads to reduced recovery of urea-N by crop plants. The percent recovery of fertilizer N, say urea-N for example, is generally called as nitrogen use efficiency (NUE).

The recovery of fertilizer N by a crop, especially through chemical fertilizers such as urea, in India ranges from 30 to 50% for rice. One scientific study has estimated a nitrogen use efficiency (NUE) below 33% for cereal production at the global scale. The unaccounted 67% fertilizer N is liable to be lost easily by leaching and/or denitrification. Thus regulation of nitrification rates results in accumulation of large amounts of nitrate in soil, which are liable to be lost easily by leaching and/or denitrification. Thus regulation of urea hydrolysis and nitrification in agricultural crop production has been one of the major strategies in overcoming these N losses. The nitrification inhibitors (NIs) are the process of nitrification involving two steps. In first step, ammonium is transformed to nitrite and in second step, nitrite is converted to nitrate. The faster nitrification rates results in accumulation of large amounts of nitrate in soil, which are liable to be lost easily by leaching and/or denitrification. Thus regulation of urea hydrolysis and nitrification in agricultural crop production has been one of the major strategies in overcoming these N losses. The nitrification inhibitors (NIs) are the process of nitrification involving two steps. In first step, ammonium is transformed to nitrite and in second step, nitrite is converted to nitrate. The faster nitrification rates results in accumulation of large amounts of nitrate in soil, which are liable to be lost easily by leaching and/or denitrification. Thus regulation of urea hydrolysis and nitrification in agricultural crop production has been one of the major strategies in overcoming these N losses. The nitrification inhibitors (NIs) are the process of nitrification involving two steps. In first step, ammonium is transformed to nitrite and in second step, nitrite is converted to nitrate. The faster nitrification rates results in accumulation of large amounts of nitrate in soil, which are liable to be lost easily by leaching and/or denitrification. Thus regulation of urea hydrolysis and nitrification in agricultural crop production has been one of the major strategies in overcoming these N losses. The nitrification inhibitors (NIs) are the process of nitrification involving two steps. In first step, ammonium is transformed to nitrite and in second step, nitrite is converted to nitrate. The faster nitrification rates results in accumulation of large amounts of nitrate in soil, which are liable to be lost easily by leaching and/or denitrification. Thus regulation of urea hydrolysis and nitrification in agricultural crop production has been one of the major strategies in overcoming these N losses. The nitrification inhibitors (NIs) are the process of nitrification involving two steps. In first step, ammonium is transformed to nitrite and in second step, nitrite is converted to nitrate. The faster nitrification rates results in accumulation of large amounts of nitrate in soil, which are liable to be lost easily by leaching and/or denitrification. Thus regulation of urea hydrolysis and nitrification in agricultural crop production has been one of the major strategies in overcoming these N losses. The nitrification inhibitors (NIs) are the process of nitrification involving two steps. In first step, ammonium is transformed to nitrite and in second step, nitrite is converted to nitrate. The faster nitrification rates results in accumulation of large amounts of nitrate in soil, which are liable to be lost easily by leaching and/or denitrification. Thus regulation of urea hydrolysis and nitrification in agricultural crop production has been one of the major strategies in overcoming these N losses. The nitrification inhibitors (NIs) are...
Digital India

The Prime Minister, Narendra Modi, has said the Digital India programme will fulfil the dreams of crores of Indians. Launching the programme in New Delhi, Mr. Modi said the leading business houses of the country would invest Rs. 4.5 lakh crore in the programme which will generate employment for 18 lakh people in the country. Describing cyber-related risks as a global threat of "bloodless war", he called upon the nation to connect with each other to serve the entire world by building credible cyber-security systems.

The Prime Minister also exhorted the companies to think about building India's IT industry to boost production of electronic devices and goods in the country, as part of the "Make in India" initiative, to reduce dependence on imports. He outlined his vision of e-governance and mobile governance, where all important Government services are available on the mobile phone. He assured full support to young entrepreneurs who wished to start-up. "India's soil is not just for farming," he said. He also announced a large digital infrastructure project using optical fibre. He assured full support to young entrepreneurs who wished to start-up. "India's soil is not just for farming," he said. He also announced a large digital infrastructure project using optical fibre.

Digital India has been envisioned as an ambitious umbrella programme to transform India into a globally competitive economy and knowledge economy. The vision of Digital India is centred on three key areas - (i) Universal Internet and Mobile Connectivity for Every Citizen, (ii) Governance & Services on Demand and (iii) Digital Empowerment of Citizens.

Various projects/products launched or ready to be launched under this initiative are as follows:

- Digital locker system to maintain the utilisation of paperless documents and enable sharing of e-documents across agencies.
- MDM - an online platform to engage citizens in governance, through a 'Discuss', 'Do' and 'Disseminate' app.
- Swachh Bharat Mission (SBM) Mobile app to achieve the goals of Swachh Bharat Mission.
- e-sign framework to allow citizens to digitize a document online using Aadhaar authentication.
- The Online Registration System (ORS) under the eHospital application for providing government services with the payment of fees and appointment, online diagnostic reports, enquiring status of laboratory and outside.
- National Scholarships Portal for beneficiaries from submission of application to verification, sanction and disbursal.
- Digilize India Platform (DIP) for large scale digitization of records in the country that would facilitate efficient delivery of services.
- Bharat Net, a high speed digital highway, a 10 lakh Gram Panchayats of the country's world's largest rural broadband connectivity project using optical fibre.
- BSNL's Next Generation Network (NGN) services offer the latest packet types of voice, data, multimedia video and other types of packet switched communications.
- BSNL's large scale deployment of Wi-Fi hotspots throughout the country.
- 'Broadband Highways' as one of the pillars of the initiative will enable the digitization of public services.
- To create BPO centres in different North Eastern states to provide employment also in the smaller mofussil towns of other states.
- National Centre for Flexible Electronics (NCFlexE) to promote research and innovation in the emerging area of Flexible Electronics.
- Centre of Excellence on Internet on Thursday (CET on Thursday) at the joint of the government agencies and private institutions such as Nasscom. (PIB Release)

**CAREER OPPORTUNITIES**

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Technology program have a comprehen- sive understanding of the fundamentals of wood as a raw material. This knowledge includes the anatomical, physical, chemical, mechanical and manufacturing properties of wood.

In addition, students receive training in the major wood processing operations. In their final year, students are required to work in one of the major Wood Technology Institutes. Examples of areas often chosen are industrial engineering, business administration, computer science, civil engineering, and chemistry. Some universities offer degrees in wood en- gineering as part of their engineering cur- riculum. Wood technology professionals are found in a variety of industries and occupations.

**PROCEDURE OF ADMISSION**

In India, Forest Research Institute (FRI) under ICFCRE is only offering the Master degree in Wood Technology. The application/selection procedure in the Master's in Wood Technology can be applied only after completion of graduation in Science/ Forestry/ Agricultural Basic sciences etc. The process of selection in master's degree in wood technology is also conducted in the entrance exam conducted at all India level. Similarly, for Ph.D. one can take admis- sion in various Wood Technology/ Forest Research Institutions such as Central Pipal & Paper Research Institute (CPPRI) & FRI. The National Eligibility Test for Fellowship (NET) conducted by Agricultural Scientific Research Board (ASRB) of ICAR, Pusa, New Delhi, one of the institutions for the certificates for lecturership, which can be acquired after Post Graduation in Wood Technology. Besides this, the Post-Doctoral Fellowship (PDF) in Wood Technology is also offered by various National and International Universities/Institutions. EMPLOYMENT AND CAREER OPPORTUNITIES

The opportunities for a satisfying career in Wood Science and Technology sector are wide-raying. Currently employment openings exceed the num- ber of Indigenous graduates available in the market. Fill in these gaps, and this is where the future lies ahead. Opportunities for employment in the field of Wood Science and Technology can be compared favorably with those offered to engineers in various sectors of the economy.

The career advancement in this field is also excellent. The different sectors and sub-sectors that are involved in wood technology are the major wood processing industries, furniture industries, saw milling & saw dust, pellet making, wood based panel industries, craft woodwork, industrial engineering, business administration, computer science, industrial engineering and chemistry. These experts will find excellent career opportunities in large number of wood technology professionals are found in a variety of industries and occupations.

**FOR PH.D. AND PG PROGRAMME**

University/ institutes in India or abroad in the field of natural science/ technology professionals can plan for Ph.D. and PG programmes. University/ institutes in India or abroad in the field of natural science/ technology professionals can plan for Ph.D. and PG programmes. University/ institutes in India or abroad in the field of natural science/ technology professionals can plan for Ph.D. and PG programmes. University/ institutes in India or abroad in the field of natural science/ technology professionals can plan for Ph.D. and PG programmes.

**FOR LEADERSHIP PROVISION**

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