

National Seminar

on

**Fly Ash Based Amendments
for Amelioration of Degraded Soils
to Increase Crop Production
in the Gangetic Plains**

**CSSRI Regional Station
Lucknow (Uttar Pradesh)**

May 7-8, 2011

Organised by the
National Institute of Ecology
and
Central Soil Salinity Research Institute, Karnal

Supported by
Department of Science and Technology, New Delhi



Background

Indo-Gangetic plains are the most fertile alluvial soils producing food grains to meet the demands of increasing human population of the country. In this ecoregion, about 23.41 million ha area suffers from land degradation of different types (water erosion, salinity, sodicity and waterlogging). In Uttar Pradesh, alone about 14.4 Mha area is variously degraded. Of this, about 1.3 Mha area is beset with the problem of salinity and sodicity. Seasonal flooding, impeded drainage and secondary salinity along the canals pose another problem of management of soil water and land fertility / productivity. Serious attention is given by different agencies to the reclamation of such lands to improve their productivity. UP Bhumi Sudhar Nigam and Department of Agriculture, Govt. of UP, have taken up many programmes for improvement of such lands.

Fly Ash (a by-product of the thermal power plants) has been used to ameliorate saline-sodic soils with promising results. Experiments conducted at IIFCO, Phulpur, have shown that application of fly ash and gypsum had a synergistic positive effect in increasing the yield of paddy, wheat and mustard. The combined effect of fly ash and manure was most effective in highly sodic soils. There was decrease in bulk density and increase in porosity enhancing the soil reclamation efficiency of the amendments. The positive effects were also noted in water retention and nutrient holding capacity of the soil. No adverse effect on the environment was reported from these experiments conducted in seven villages around the area. A project at the IGFR, Jhansi, gave very encouraging results on red gravelly and black soils. Fly ash reduced the bulk density and particle density of both the soils leading to more water retention and a significant increase in the crop yield. Many other studies in different parts of the state and country prove the validity of these results. But upscaling and large scale adoption on the farmers field is still lacking.

At present about 120 coal based thermal power stations in India are producing about 260 million tones of fly ash annually. It is estimated that fly ash generation may increase to about 170 million tones by 2012 and 225 million tones by 2017. Within UP, there are many thermal power plants generating huge volume of fly ash every day creating the problem for its proper disposal. Although, there are many uses of fly ash in construction and road making, its use in agriculture is still not picking up.

Considering the problems of soil fertility and degradation in the region, upscaling the use of fly ash and its large scale adoption on the farmers field is required. There appears to be a need for sensitizing the planners and decision makers for adoption of this technology through in-depth scientific discussion on the subject. Access to the right information at the right time is fundamental to coherent policy trade-offs. Better understanding and quantitative measurements of structural and functional parameters of natural resources to support sustainable production are basic to the long-term solution.

The Seminar

The objective of this seminar is to bring together scientists, farmers, planners, development workers and engineers from thermal power plants at one platform for discussion and making applicable recommendations for the use of fly ash. The seminar intends to contribute to the knowledge generation and compilation, and suggest suitable fly ash based solutions to improve crop productivity through a collective thinking process.

Theme Areas

- Amelioration of soil degradation by Fly ash amendments
- Fly ash as a source of nutrients
- Utilization of fly ash in plant protection
- Use of Fly ash as a microbial carrier
- Fly ash and Environment
- Management of waterlogged soils

The Seminar will comprise of mainly invited presentations. Offered contributions will be accepted for brief 10-minute oral presentations which must highlight salient points only. We wish to ensure that there is ample opportunity for discussion.

Participation

All those interested to participate in the seminar and/or contribute to it are requested to communicate at the earliest with the Convener (address below) and provide a note on their background and contribution to the subject.

All contributors, including invited speakers, are requested to submit an Extended Abstract (maximum 2 A-4 pages – single space, 12 point) **latest by 15th April 2011** by **Email only to the Convener (address given below)**. The Abstracts will be considered only if the contributor is able to attend the Seminar. The Abstracts will be suitably circulated during the seminar. Contributors must also submit their full papers, preferably during the Seminar. These papers will be reviewed and after appropriate editing will be compiled into a Proceedings volume to be published by the NIE for wide circulation.

The NIE shall strive to keep the carbon footprint of the seminar to the minimum, and hence rely mostly on E-mail communication.

Programme

The Seminar will be held in the conference hall of **Central Soil Salinity Research Institute, Regional Station (ICAR), Lucknow**. The detailed programme is being developed and will be sent to all concerned by email.

Registration Fee

There shall be token Registration Fee for the participants as noted below:

Invited Speakers and Sponsors	NIL
Corporate Representatives	Rs 2000
Participants from Academic Institutions	Rs 1000
NGO Representatives	Rs 1000
Members of the NIE	Rs 750

Local Arrangements

Information on accommodation and other local arrangements will be communicated to the participants directly. Efforts are being made to book Guest House accommodation close to the venue. The Registration Fee does not include the cost of accommodation.

National Organizing Committee

Dr. S. Ayyappan, DG, ICAR	- Patron
Dr. R.B.Singh, President, NAAS	- Patron
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Local Organizing Committee

Prof. S.R. Singh, Ex-V.C., R.A.U., Pusa	- Chairman
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Dr. T. Damodaran	- Member
Dr. C.L.Verma	- Member
Dr. R.P.Singh	- Member
Dr. P.S.Pathak, Vice-President, NIE	- Convener
Dr. V.K. Mishra	- Organizing Secretary

Contact Details

All communications regarding the Seminar should be addressed to the Convener:

Dr. Prem S. Pathak, *Convener*
K-1/1450 Aashiyana Colony,
Kanpur Road Scheme, Lucknow 226012

Email: pathak.prem@gmail.com

Tel: 0522-2422395 Cell: 9415112911

or

Dr. V.K.Mishra, *Organizing Secretary*
CSSRI Regional Station,
Opposite Manyavar Kanshi Ram Smarak,
Jail Road, Lucknow
Cell: 09451990546

ABOUT THE ORGANISER

The National Institute of Ecology (NIE) is India's premier non-governmental organization (professional association) in the fields of Ecology and Environmental Science. Started in 1978, it is registered under the Societies Registration Act at Jaipur (495/80-81). It is also registered under sections 12A and 80G of the Income Tax Act and hence the donations made to the NIE are eligible for tax deductions. The NIE is also registered under the FCRA and is eligible to receive overseas contributions and grants.

The NIE has its members drawn from all disciplines (including Engineering and Social Sciences) and from every part of India, besides from a few other countries. The NIE organizes national and international workshops, symposia and conferences, conducts training, undertakes research projects, and publishes the ***International Journal of Ecology and Environmental Sciences*** and the ***Bulletin of the NIE***. It has also instituted a Prof. R. Misra Birth Centenary Lecture awarded annually, since 2008, to an eminent ecologist.

The NIE works closely with the concerned government departments/Ministries as well as the NGOs. It maintains its main office in Delhi, and has five regional offices. It has recently initiated two Centres: a **Centre for Application & Research in Eco-technology and Ecological Engineering** and a **Centre for Inland Waters in South Asia**.

For details and membership information, visit our website: <http://www.nieindia.org>