

Annual Report, 2011-12

# Strengthening INDIA'S FOOD SECURITY.

How Nagarjuna Fertilizers is strengthening national interest through the delivery of comprehensive nutrition solutions



Nagarjuna Fertilizers  
and Chemicals Limited



## Disclaimer

In this annual report, we have disclosed forward-looking information to enable investors to comprehend our prospects and take informed investment decisions. This report and other statements – written and oral – that we periodically make contain forward-looking statements that set out anticipated results based on the management's plans and assumptions. We have tried wherever possible to identify such statements by using words such as 'anticipates', 'estimates', 'expects', 'projects', 'intends', 'plans', 'believes' and words of similar substance in connection with any discussion of future performance. We cannot guarantee that these forward-looking statements will be realised, although we believe we have been prudent in our assumptions. The achievement of results is subject to risks, uncertainties and even inaccurate assumptions. Should known or unknown risks or uncertainties materialise, or should underlying assumptions prove inaccurate, actual results could vary materially from those anticipated, estimated or projected. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise.

Figures for the years prior to 2011-12 pertain to Erstwhile NFCL prior to merger with Kakinada Fertilizers Limited (now Nagarjuna Fertilizers and Chemicals Limited).







## STRENGTHENING INDIAN FOOD SECURITY – EVERYDAY

India accounts for around 18% of the global population but only 11% share of the world's arable land area

India's arable land area has largely peaked, water availability is dwindling but India's population is increasing rapidly.

India's key grain yields are 50-60% of that in China.

India's agricultural growth rate is less than 2% leading to increasing food prices.

This grim reality makes it imperative for India to enhance agricultural growth rate and produce more food from a given land area.

Nagarjuna is engaged in helping India achieve global productivity levels.

Nagarjuna Fertilizers and Chemicals Ltd has achieved consistent growth in market share, revenues and profits.

Performance for the Year 2011-12:

61.71 % increase in revenues,  
61.98% growth in topline and  
15.86% growth in bottomline

# AMONGST THE MOST RECOGNIZED AND AWARDED FERTILIZER COMPANIES IN ASIA



## ■ 2012

- CII Environmental Best Practices Award 2012 for implementing dry de-dusting system at conveyors area of Urea plants under the "Most Innovative Environmental Project" category.

## ■ 2011

- Received the prestigious RC 14001:2008 (Responsible Care) certification
- National Safety council Award for the year 2010 for developing and implementing good Occupational Safety and Health Management Systems & Procedures and achieving significant performance.
- Fertilizer Association of India (FAI) award for "Excellence in Safety for the year 2009-10".
- Economic Times and Frost & Sullivan prestigious "India Manufacturing Excellence (IMEA) - Platinum Award" in "Process Sector" category for the year 2010.
- British Safety Council, UK, "International Safety Award for Best Safety Performance"

## ■ 2010

- Government of Andhra Pradesh 'Best Management Award' for the year 2009-10 for maintaining excellent cordial industrial relations and for effective implementation of employee welfare activities.
- The Financial Express & Emergent Ventures India 'FE-EVI Green Business Leadership Best Performer Award' for 2009-10 under Chemicals & Fertilizers Category.
- ICC (Indian Chemical Council) Award, for 'Water Resource Management in Chemical Industry' for the year 2009-10.
- ICC Award of 'Certificate of Merit' for the Best Compliant under Responsible Care for Codes Environment Protection and Process Safety Management.

## ■ 2009

- Fertilizer Association of India (FAI) 'Environmental Protection Award' in the nitrogenous fertilizer plants category and joint winner for excellence in Safety Award.
- International Fertilizer Industry Association (IFA) Green Leaf 2nd runner-up award in the Global Competition for Excellence and Innovation in Safety, Health and Environment.

## ■ 2008

- National Safety Council Award from National Safety Council, Andhra Pradesh. Chapter for implementing the Process Safety Management Systems (PSMS).
- For the third time, Nagarjuna Fertilizers and Chemicals Limited has won the prestigious FAI Environmental Protection Award in the nitrogenous fertilizer plants category for the year 2006-07. NFCL has been honored for outstanding contribution for the sustainability of ecological balance at Kakinada Plant. This Award reflects the collective effort, dedication and commitment of NFCL associates and responsibility of NFCL towards the society.

## ■ 2007

- NFCL has been awarded with prestigious 'National Award for Excellence in Water Management' by CII-Sohrabji Godrej Green Business Centre, Hyderabad.

## ■ 2006

- NFCL has won the 'Best Technical Innovation' Award from Fertilizer Association of India for performance excellence in the field of production technology.
- Nagarjuna Fertilizers and Chemicals Limited has been awarded with 'Best Management' by Labour Department, Government of Andhra Pradesh on the occasion of May Day.
- NFCL participated in the Corporate Social Responsibility Award - 2004-05 competitions, which were organized by The Energy and Resources Institute (TERI), New Delhi. A total of 180 Companies participated. NFCL was short listed in the Best Ten Companies and given a 'Certificate of Appreciation', for its efforts towards good Corporate Citizenship and sustainable initiatives amongst Corporates with turnover above 500 crore rupees.
- Award for Excellence in Natural Gas Conservation' in the 'Fertilizers Sector' category from Gas Authority of India Limited (GAIL).

## ■ 2005

- FAI (Fertilizer Association of India) Environment Protection Award in the Nitrogenous fertilizer plants category for the year 2004-05.
- 5 Star rating in O H & S Audit from British Safety Council, UK
- Commendation Award in "Leadership and Excellence Awards in Safety, Health & Environment (SHE) 2004", by Confederation of Indian Industry, Southern Region, Chennai.
- Water Efficient Unit Award during "National Award for Excellence in Water Management 2004" by Confederation of Indian Industry, Hyderabad.

## ■ 2004

- Award for Good Practices in Cleaner Production and Pollution Control by A.P. Pollution Control Board.
- Environmental Protection Award in Nitrogenous Fertilizer Plants for 2001-02 by Fertilizer Association of India.

## ■ 2002

- OHSAS 18001 Certification from BVQI, Netherlands.
- Commendation Trophy by National Safety Council for implementing OHSAS 18001 by A.P. Chapter and Director of Factories, Andhra Pradesh.

## ■ 2001

- Bronze Award for Occupational Safety for 2001 by ROSPA, U.K.
- Best Environmental Improvement Effort by Industries located in the State by FAPCCI.
- Best Environmental Management Plan 2000-01 by A.P. Pollution Control Board, Visakhapatnam.
- Bronze Award for Occupational Safety for 2000 by ROSPA, U.K.

## ■ 2000

- Best School Industry Linkage by NCERT.
- ISO 14001 EMS Certification by BVQI, Netherlands.
- 3 Star Rating in OH&S Audit by British Safety Council, U.K.
- Vanamitra Award 1999 for developing and maintaining Green Belt by Government of Andhra Pradesh.

## ■ 1999

- Merit Award for 1998 by Royal Society for the Prevention of Accidents (ROSPA).
- Paryavara Parirakshak Award by Rotary International District 3020 & Rotary Club of Waltair.
- Golden Peacock Environment Management Award 1998 by World Environment Foundation (WEF), New Delhi.
- National Safety Award for 1998 by British Safety Council, U.K.
- "Best Workers Welfare (Including Family Planning) effort by an Industrial or Commercial Unit in the State" for 1997-98 from A.P. Chamber of Commerce and Industry.

## ■ 1998

- National Safety Award for 1997 by British Safety Council, U.K.
- Merit Award for 1997 from ROSPA, U.K.
- Awards for Innovative and Purposeful Programmes for 1996 from ICMA, Mumbai.

## ■ 1997

- National Safety Award for 1996 by British Safety Council, U.K.
- Award of Merit for 1994-95 from National Safety Council, USA.

## ■ 1996

- Rajiv Gandhi Parti Bhoomi Mitra Award for 1994-96 by Waste Land Development, Govt. of India.
- National Safety Award for 1995 by British Safety Council, U.K.
- Golden Peacock National Quality Award for 1995 by Institute of Directors, New Delhi.
- Awards for Environmental Control Strategies & Safety in Chemical Plants for 1994 from ICMA, Bombay.

## ■ 1995

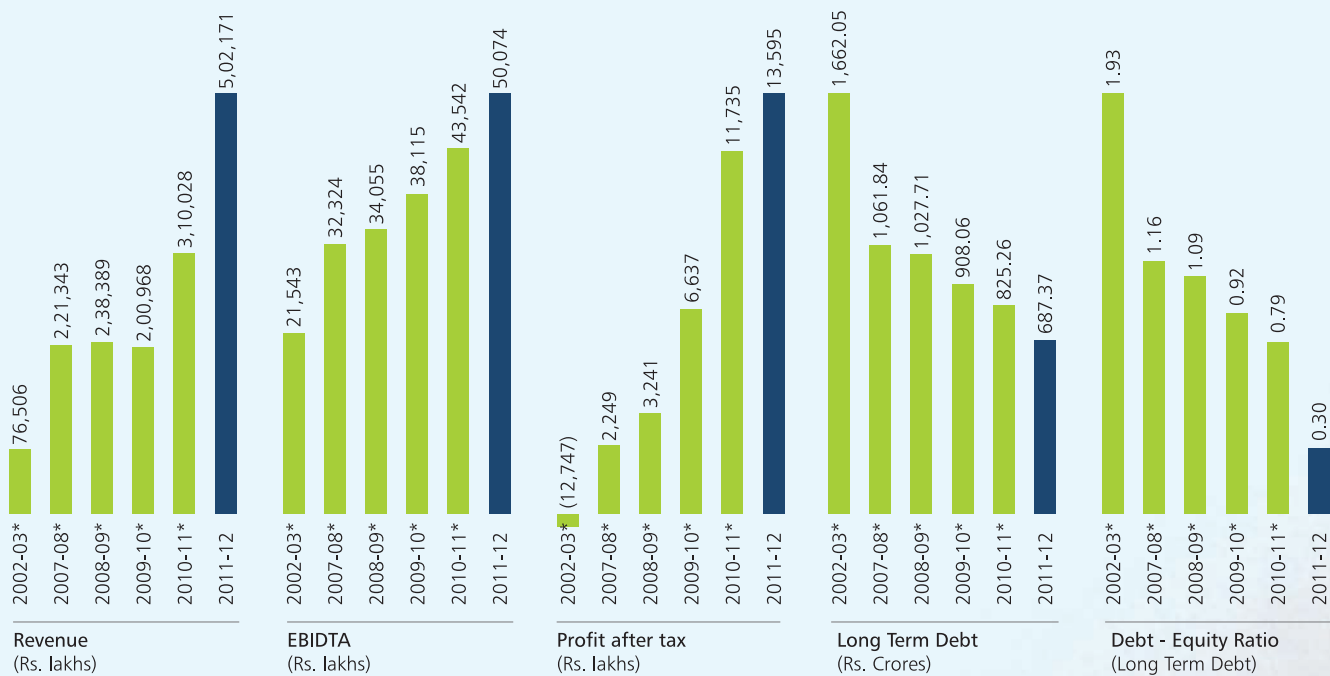
- Best Industrial Canteen for 1994 by National Safety Council, AP Chapter, Hyderabad.
- Good Housekeeping for 1994 by National Safety Council, AP Chapter, Hyderabad.
- ISO 9002 Certification from BVQI, Netherlands.
- National Safety Award for 1994 by British Safety Council, U.K.

## ■ 1993

- "EPIC" award for Anti Pollution measures taken by the Industry from Environment Public Interest Committee, Kakinada.



# CONSISTENT AND PROFITABLE GROWTH



\* Data pertains to erstwhile NFCL

- India has the largest arable land in the world
- India is the second largest fertilizer market in the world
- Indian fertilizer consumption is 168 kg/ha compared to 488 kg/ha fertilizer consumption in China
- India's key cereal yield is half of that of China's yield per ha

# ESSENTIAL PRODUCTS, GROWING MARKETS AND MARKET LEADERSHIP POSITION

## Plant Nutrition Business

Nagarjuna is one of the leading manufacturers and suppliers of plant nutrients in India. The potential benefits from improved plant nutrition are virtually limitless. With the right plant nutrition it is not surprising that the grower can produce higher yields, better flavored and greater nutritional content crops of vigor that are less prone to pests and disease attack - goals which form the core of our plant nutrition strategy. It is widely recognized by agronomists that plant nutrition is directly responsible for approximately 60% of the agricultural yield. The balance is provided by other factors like better irrigation, improved seeds, cultivation practices, pest control and planting density.

We supply a broad portfolio of nutrition products and services that include both macro and micro fertilizers.

Over the last 26 years, Nagarjuna Fertilizers and Chemicals Limited marketed a cumulative 637,77,839 MT of fertilizers. Servicing cumulative 53,59,48,229 acres of land area and cumulative 21,68,85,277 farmer engagements.



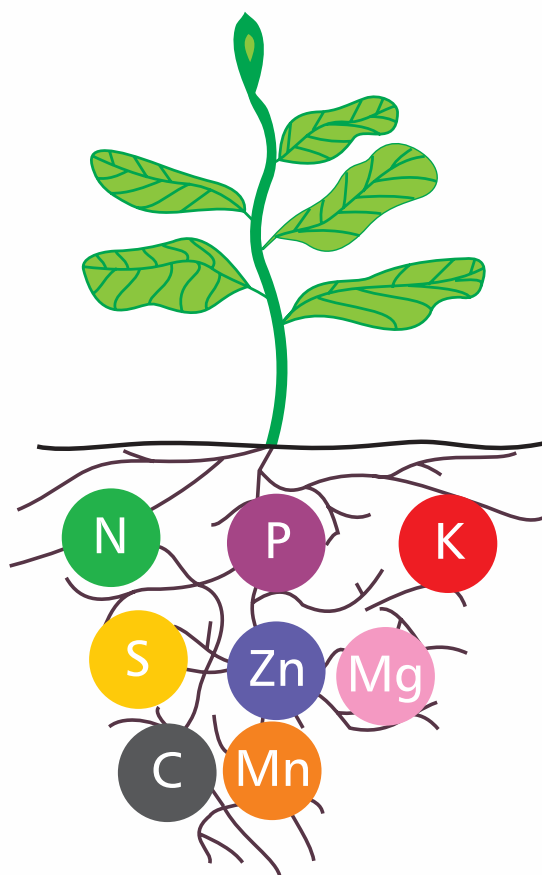
The Company uses the Groups Pan-India Brands, Sales, Marketing and Distribution Capabilities to sell its products

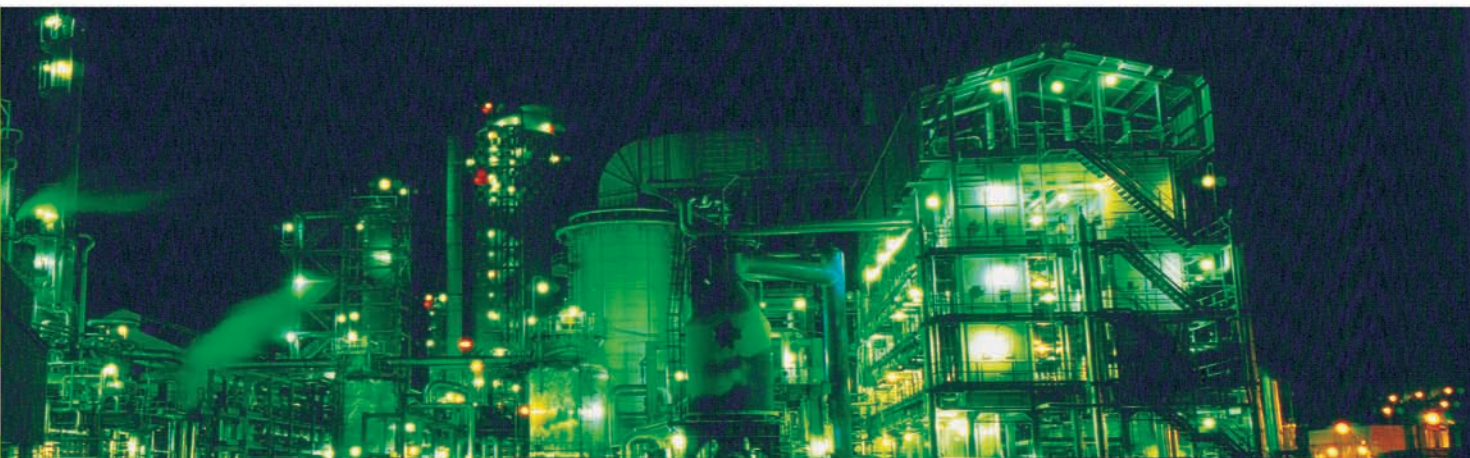
Fact : 60% of crop yield is contributed by plant nutrients (fertilizers)

## Plant Nutrient Product Portfolio

**Manufactured** (Urea)

**Non-Manufactured** (DAP, MAP, MOP, Water Soluble Fertilizers, Micronutrients, Bio-products, Customised Fertilizers, Seeds)





## Micro-Irrigation and Nutrigation Systems

Perhaps the most serious challenge of mankind in the 21st century will be the lack of fresh water. Population growth, pollution and climate change, all accelerating, are likely to produce a drastic decline in water supply in the coming decades. Supplies are already problematic for up to a third of the world's population. As agriculture alone consumes 60% of today's fresh water, it is imperative that water saving should start from here. The answer is Micro Irrigation.

We offer products and services that ensure slow, regular and precise delivery of water and agricultural inputs to the crop. The result: Optimum growth and healthy plants, fewer pests, healthy environment and substantial cost savings.

We are constantly expanding our capacity, product portfolio and market presence.

## Agri-Informatics and Services

Best farming practices, Access to markets

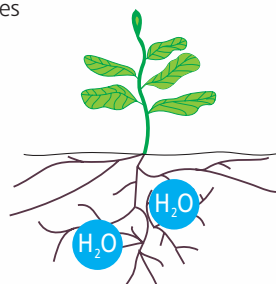


Lower Costs, Higher Yields, Higher Returns

Fact : Water is the most vital nutrient

## Micro-Irrigation and Nutrigation Systems Portfolio

- Integral Drip Laterals (12mm, 16mm & 20mm) Superline - Flat Dripper Type
- Easy Drip - Cylindrical Dripper Type
- Plain Laterals
- HDPE Sprinkler Pipes & Fittings
- PVC Pipes



## Agri-Informatics and Services Portfolio

- Agri-Informatics - information management and information dissemination solutions for agri-sector
- e-Learning
- Knowledge Portal
- Agri IT enabled services

## MICRO-IRRIGATION AND NUTRIGATION SYSTEMS, AGRI-INFORMATICS AND SERVICES

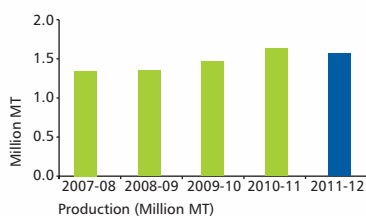




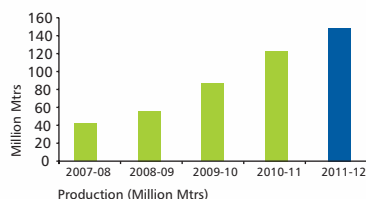
# EFFICIENT AND ENVIRONMENT FRIENDLY MANUFACTURING

## Production Operations

### Production Performance (Urea)



### Production Performance (Micro Irrigation)



## Fertilizers

NFCL has a track record of being one of the best operators of fertilizer plants in the world across key parameters like asset utilization, cost, environment, health and safety.

### Capacity Utilization

NFCL Plants at Kakinada operate at 130% of capacity making the Kakinada facility, amongst the most efficient facilities in the world.

### Safety

NFCL fertilizer plants are being operated with 3.16 million accident free man hours as on March 31, 2012.

### Cost

Nagarjuna is amongst the lowest cost Urea manufacturer in India. The plant is located at Kakinada, Andhra Pradesh, one of the highest consuming and also

one of the fastest growing fertilizer markets in India. Nagarjuna is the only manufacturer of urea in South and South East India.

## Micro Irrigation

Micro-irrigation products are manufactured at three manufacturing facilities located at Nacharam, Andhra Pradesh, Sadashivpet, Andhra Pradesh and Halol, Gujarat.

### Capacity Utilization

NFCL's Micro Irrigation Plant operate at a high capacity utilization

### Safety

Micro Irrigation facilities have the best safety records. Accident free operations for all the plants for the entire period since inception (15 years).

### Cost

MI Plants are operating at low costs in the industry and also provide low cost solutions to farmers. Low cost dripline like ECO Superline has been developed inhouse and Nagarjuna is the pioneer in this segment.

### Technology

NFCL use the latest internationally recognized technologies for the production such as latest Pressure Compensated Integral laterals, first time PC subsurface with Automation and development of 20 mm Integral Drip laterals.



## CUSTOMER FEEDBACK



Nagarjuna's customers are loyal and Nagarjuna is the first company they turn to for products and service-needs, advice and help.

**Mr. Alope Banaerjee, Manager,**  
Kamalapur Tea Estate, Darjeeling, West Bengal

"I have used the Company's products viz., Amino Plus & N-Bloom @ 2 ml / liter on Tea Gardens and found that both the products are useful and give better crop in comparison to conventional products"

**KAMALPUR TEA ESTATE**

Head Office :  
KAMALPUR TEA CO.  
Sankar Road  
P.O. Siliguri-734001  
Dt. Darjeeling  
Phone : 2529911

Garden Office :  
KAMALPUR TEA ESTATE  
P.O. Bagdogra - 734014  
Dt. Darjeeling

Ref. No. 95/6/2009-10. Date 19-12-2009.

\*TO SHOW IT MAY COME\*

This is to Certify that we have used Amino Plus 2 ml/Litre and N-Bloom 2ml/Litre, product of N/S, Nagarjuna Fertilizers & Chemical Ltd., and found the both product is useful and give better crop in comparison of the other conventional products.

(ALOPE BANERJEE)  
Manager,  
Kamalpur Tea Estate.

**Mr. L.Swamireddy, Porandla,village,**  
Kareemnagar Dist., Andhra Pradesh.

"I have applied Customized Fertilizer on Rabi Paddy-2012 and observed that the pest and disease incidence are less when compared to other farming practice on Rice. I have got 6 qt more yield/ Acre compared to the other farmer practice. The additional cost of fertilizer application in CF was ₹ 2,325/- while the additional profit by using CF was ₹ 4,300/-"

**Mr. Dharmaraj B**  
Malgunde, Mohol  
(Talug), Sholapur  
(Dist), Maharashtra

"I have been using NFCL water soluble fertilizers for the last 2 years for cultivating Sugarcane on 18 Acres of my land. The Sugarcane yield has increased by 30% when compared to the other farming practice. I am satisfied about the Nagarjuna product and am recommending the Nagarjuna brand to other farmers."

**Mr. Manesh**  
Jaysighrao  
Pharade, Jawali  
Dist, Satara

"I am using Nagarjuna's Specialty Fertilizer for the last 2 years on my fields. Earlier I used to practice flood irrigation system with bulk fertilizers only from which I used to get yield of 70 mts per acre average. Later I implemented drip irrigation and started using Nagarjuna Specialty Fertilizers and since then noticed 20 mts growth in the yields. I appreciate the quality of products and believe that Nagarjuna is one of the best Specialty Fertilizers."

**Mr. Imran Mohammadsafi, Zarna,**  
Ta.Valia, Dist. Bharuch

"I installed Nagarjuna Fertilizers &

NAME OF FARMER: Mr. Dharmaraj B. Malgunde  
ADDRESS: Mohol, Talug, Sholapur  
Tal. : Sholapur  
Dist. : Maharashtra  
Area : 18 Acre

Product used: Amino Plus & N-Bloom

Remarks: I have been using NFCL water soluble fertilizers for the last 2 years for cultivating Sugarcane on 18 Acres of my land. The Sugarcane yield has increased by 30% when compared to the other farming practice. I am satisfied about the Nagarjuna product and am recommending the Nagarjuna brand to other farmers.

Date: 19-12-2009

Signature: Mr. Dharmaraj B. Malgunde

NAME OF FARMER: Mr. Manesh Jaysighrao Pharade  
ADDRESS: Jawali, Dist. Satara  
Tal. : Satara  
Dist. : Maharashtra  
Area : 18 Acre

Product used: Amino Plus & N-Bloom

Remarks: I am using NFCL water soluble fertilizers for the last 2 years on my fields. Earlier I used to practice flood irrigation system with bulk fertilizers only from which I used to get yield of 70 mts per acre average. Later I implemented drip irrigation and started using Nagarjuna Specialty Fertilizers and since then noticed 20 mts growth in the yields. I appreciate the quality of products and believe that Nagarjuna is one of the best Specialty Fertilizers.

Date: 19-12-2009

Signature: Mr. Manesh Jaysighrao Pharade

Chemicals Ltd. under GGRCL scheme. Its Reg. No. is BHR- 6015. I have grown Brinjal (Var. Gulabi Ringan) in 1.5 acre, I have produced Brinjal of ₹ 1,95,000/- against the cost of expenses was ₹ 90,000/- Nagarjuna drip system is running in good condition in my field and I am totally satisfied."

**Mr. Hanuman Sahay, Amer (Dist),**  
Jaipur, Rajasthan

"I have used NFCL Products on the cauliflower grown on 0.40 ha of land. The yield per ha in Drip method is 19.20 t/Ha when compared to 11.20 t/Ha as per the traditional methods. I am very happy with the 71% increase in yield because of Nagarjuna"

**Mr. Madan Lal Yadav , Chomu(Dist),**  
Jaipur, Rajasthan

"I have used NFCL Products on the Tomato (Kranti) grown on 0.40 ha of land. The yield per ha in Drip method is 32 t/Ha when compared to 20 t/Ha as per the traditional methods. We had a 60% increase in yield"

NAME OF FARMER: Mr. Hanuman Sahay  
ADDRESS: Amer, Dist. Jaipur  
Tal. : Jaipur  
Dist. : Rajasthan  
Area : 1.5 Acre

Product used: Amino Plus & N-Bloom

Remarks: I have grown Brinjal (Var. Gulabi Ringan) in 1.5 acre, I have produced Brinjal of ₹ 1,95,000/- against the cost of expenses was ₹ 90,000/- Nagarjuna drip system is running in good condition in my field and I am totally satisfied."

Date: 19-12-2009

Signature: Mr. Hanuman Sahay

NAME OF FARMER: Mr. Madan Lal Yadav  
ADDRESS: Chomu, Dist. Jaipur  
Tal. : Jaipur  
Dist. : Rajasthan  
Area : 0.40 Acre

Product used: Amino Plus & N-Bloom

Remarks: I have used NFCL Products on the Tomato (Kranti) grown on 0.40 ha of land. The yield per ha in Drip method is 32 t/Ha when compared to 20 t/Ha as per the traditional methods. We had a 60% increase in yield"

Date: 19-12-2009

Signature: Mr. Madan Lal Yadav

# SUSTAINABILITY

Nagarjuna Group's commitment towards Environmental Management is widely appreciated and prestigious awards were conferred by International Fertilizers Association (IFA, France), Fertilizer Association of India (FAI, New Delhi), Chemical Manufacturers' Association, World Environment Foundation, CII, FE & EVI, Indian Chemical Council, GAIL Greentech Foundation, etc.



The experts at Nagarjuna transformed this once barren land into a lush green belt full of flora and fauna.

The company has invested significantly and successfully transformed around 600 acres of highly saline marshy area devoid of any vegetation into a lush Green belt at Kakinada with over 400,000 trees such as Pongamia Glabra, Rain tree, Neem, Ficus carities among others with over 120 animals like Spotted Deers, Sambars, Guinea Pigs, Rabbits etc and over 130 birds such as Pea Fowls, Turkey Fowls, Australian Ducks, Khajana Ducks, Guinea Fowl, Emu among others alongwith 147 reptiles like Star Tortoise.

11 water bodies spread across 160 acres have been formed in the Green Belt which serve as a habitat for fishes and birds, both indigenous and migratory such as Grey Heron, Purple Heron and Cranes. A deer park has been



developed as a precursor to introduction of other animals, which is authorized by the Central Zoo Authority, New Delhi.

The technology of the plant coupled with the equipment design and the additional measures have enabled the manufacturing facility at Kakinada to treat their major effluents within the respective plants and recycle back for process reuse. The pollutants emitted are much lower than the prescribed emission levels.

## NFCL Treated Effluent (Holding Pond)

Parameter	APPCB/ CPCB Limits (in mg/l except for pH)	Average Values 2011-2012
pH	6.50-8.00	7.4
Total Suspended Solids (at 103-105°C)	1004	0
Ammonical Nitrogen Total Kjeldahl Nitrogen (TKN)	50	11.8
Free Ammonical Nitrogen	100	23.0
Nitrate Nitrogen	4	0.18
Cyanide as CN	10	8.1
Vanadium as V	0.20	ND
Arsenic as As	0.20	0.01
Oil and Grease	10	ND
	10	3.4

## Gaseous Emissions at NFCL Complex

Parameter	APPCB/ CPCB Limits	Average Values 2011-2012
Urea dust from Prill Tower mg/Nm	350.0	23.2
SO <sub>2</sub> emissions for total complex kg/day	800	6.0
NOX emissions from Reformer mg/Nm at 3% O <sub>2</sub>	400	105

## Ambient Air Quality at NFCL Complex

Parameter	APPCB/ CPCB Limits	Average Values 2011-2012
Sulphur Dioxide g/m <sup>3</sup>	50	6.3
Nitrogen Dioxide g/m <sup>3</sup>	40	7.2
Particulate Matter 10g/m <sup>3</sup>	60	48.3
Ammonia g/m <sup>3</sup>	100	18.1

## Noise Levels at periphery of NFCL Complex

Parameter	APPCB/ CPCB Limits	Average Values 2011-2012
Day Time (6 AM to 10 AM)	75 dB	49.3
Night Time (10 PM to 6 AM)	70 dB	46.8

NFCL has a track record of being one of the best operators of fertilizer plants being amongst the highest energy and water conservation records. NFCL follows the best global Environment, Health and Safety standards. Various measures such as Water Conservation Measures, Water and Air Pollution Control measures, Carbon Footprint study and other measures are taken up regularly, which is reflected in the adjacent charts. In 2009-10, Carbon Dioxide recovery unit was commissioned to reduce energy consumption and air pollution. NFCL fertilizer plants are being operated with 3.16 million accident free man-hours as on March 31, 2012.

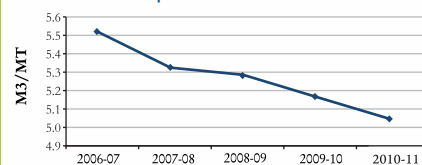
## Water and Energy Consumption

Specific energy consumption for the year 2011-12 was 5.635 Gcal/MT of Urea which is lower than the norm of 5.712 Gcal / MT Urea specified by the Government of India.

Specific Water Consumption for the year 2011-12 was 5.196 M<sup>3</sup>/MT of Urea against the CREP norm of 8.0 M<sup>3</sup>/MT of Urea.

Specific Effluent Generation for the year 2011-12 was 0.67 M<sup>3</sup>/MT of Urea against the CPCB norm of 4.0 M<sup>3</sup>/MT of Urea.

## Water Consumption for Urea



## Energy Consumption for Urea

