

# NITROGEN PARAMETERS: WORLDWIDE LEAF COLOR CHART PRODUCER

## Benny Thomas

“If you are working on something you really care about, you don’t have to be pushed. The vision pulls you.” It is this unwavering determination of Mr. Benny Thomas, the Founder and CEO of Nitrogen Parameters, Chennai that has made LCC, a path breaking tool for nitrogen management in crops, all over the world.

Entrepreneurship is inherent in this stalwart born to Mr. K. P. S Thomas and Mariyamma Thomas, Pottankulam a reputed family at Kanjirapally, Kottayam dist. Kerala, who are basically ardent planters of tea, rubber etc. He started his career looking after his family-owned tea estate & factory. He cultivated other different crops also. All through this time, Mr. Benny was driven by a passion to do something really worthwhile, a quality which he has inherited from his grandfather Chevalier K. V. Zachariah who was honoured with a Knighthood for his countless contributions rendered to the society.

In 1999, he read a small article from a local newspaper about Leaf Color Chart (LCC) technology developed by International Rice Research Institute (IRRI) & PhilRice initially in the Philippines. Mr. Benny Thomas was fascinated by this novel idea published by Dr. I. Johnkutty, a scientist at Kerala Agricultural University. The saga of LCC begins with his attempt to contact Dr. Johnkutty who shared the information he had received from IRRI, Philippines and also directed him to Dr. V. Balasubramanian, Principal Developer and CREMNET Coordinator at IRRI. Thus, a very tiny piece of information that could have been ignored lit a flame in his mind which could never be doused. He tried to communicate with Dr. Balasubramanian via letters and email about the product. After some time, he received a reply mail from Dr. Balasubramanian; IRRI was planning for a research for developing Leaf Color Chart which could be used worldwide. Dr. Balasubramanian could see the breakthrough change in the field of agriculture through this undeterred young man

and agreed that Mr. Benny could join with them for developing colors for LCC.

Dr. I Johnkutty was overwhelmed by Mr. Benny’s enthusiasm as he could think only of purchasing one LCC each at the seven subcenters under KAU and tried to convince him about the infeasibility of marketing and promoting the LCC. Mr. Benny proved to be a breed apart by gifting the farmers across the world, a tool that could impact their lives drastically. Mr. Benny introduced, produced and promoted this unique product which is very advantageous not only to farmers all over the world but also to planet earth. The practice among farmers doing blanket application of Fertilizer Nitrogen to make their farm look greener has been a major mistake done by them as they were unaware of the damages caused because of unwanted fertilizer application. The farmers generally use leaf color as an indicator to decide amount and time of N fertilizer application to crops but are not aware of the scientific basis of using leaf color as an indicator of N fertilizer demand. The farmers already use leaf colour as visual indicator to decide fertilizer N application to crops but have set their eyes on dark green color shade as threshold. He realized that Leaf Color Chart is a very simple, inexpensive, handy and easy to use tool for farmers which will benefit them a lot by regulating the use of fertilizer N, thereby augmenting the economic returns of farmers and productivity of crops. What makes LCC the best alternative for N management is its affordability to the millions of farmers for whom Green Seeker and SPAD meter are just a mirage. It is also helpful to improve nitrogen use efficiency of crops and help to save Government exchequer on Urea subsidy. But to start up with a new product from zero level was very much challenging. Mr. Benny had to start everything from scratch. He conceived LCC in his mind: long years were spent to give shape to an idea given by IRRI; a colour chart that would indicate the various hues of the leaf indicating its nitrogen level.

His pursuit was relentless with repeated trials and experiments and huge investments were made by him to make it successful.

The International Rice Research Institute (IRRI) couldn’t remain blindfolded to the dedication and perseverance of his efforts towards manufacturing the LCC, and issued a certificate to him in the year 2002.



**LEAF COLOUR CHART (LCC) FOOT PRINTS IN INDIA**  
FERTILIZER NITROGEN MANAGEMENT IN FIELD CROPS  
MANUFACTURED AND SUPPLIED BY  
**NITROGEN PARAMETERS CHENNAI INDIA (Since 2002)**



Thus, Nitrogen Parameters started the process of manufacturing LCC according to the specifications of IRRI, the world's premier research organization, in 2002.

After developing Leaf Color Chart, Mr. Benny realized that the profound destiny of LCC could be attained if only its benefits are enjoyed by each farmer. He personally approached the Agriculture Ministers, Policymakers, Commissioners / Directors of Agriculture, ICAR, Union Ministry of Agriculture, Govt. of India to include LCC in their schemes in different states.

Initially he received orders from Rice Research Institute of Iran and IRRI Philippines. He approached various state agriculture departments and central government to explain about the product. In 2005, Tamilnadu Govt & TNAU showed their interest to purchase and supply LCC to their state farmers. Gradually some of the states in India started supplying it to their farmers. At this juncture, the idea of customising LCC to meet the region-specific requirements struck him and he started discussing the possibilities with various institutes.

He had already established a very long relationship

with Punjab Agricultural University (PAU) by supplying Nitrogen Parameters IRRI LCC to them. PAU implemented the prospect of Nitrogen Parameters LCC in their research and extension activities which is mentioned in their research papers of the department of soil science, PAU. As per PAU instructions, the company worked on a range of colour combinations as a result of which, PAU-LCC by Nitrogen Parameters from IRRI LCC evolved and later leaf colour charts in cereal crops like Rice, Wheat, Maize and Cotton were developed. The company sponsored a project of PAU for developing a success story of using LCC in village Lalton Khurd, Ludhiana to promote LCC technology. Farmers were found highly satisfied with the crop performances following LCC-based fertilizer N application in Punjab and other States.

Indian Institute of Rice Research (IIRR) one of the Institutes of the Indian Council of Agricultural Research (ICAR), India, approached Nitrogen Parameters for having Collaboration for developing a 5 Panel Customized IIRR LCC from Nitrogen Parameters IRRI LCC, especially for the irrigated ecosystem. This led to the development of a new

IIRR 5 Panel LCC.

In collaboration with NRRI, a new 5 Panel Customized LCC has been developed for N management in rice for different ecologies on the basis of the spectral evaluation of leaves of hundreds of HYVs and local cultivars grown in Eastern India under different levels of N applications. Indian economic savings of urea fertilizer by using leaf color chart (LCC) in rice, wheat, maize and BT cotton is approximately 18000 crores annually.

At present, there are ongoing researches and validations done state-wise for site specific LCC in collaboration with several other institutes in India, namely, Tamilnadu Agricultural University (TNAU) and University of Agricultural Science (UAS), Raichur.

Marketing of a new innovative product was very crucial, keeping the product quality is also very important, especially about Leaf Color Chart which is associated with many similar-looking complicated green variety colours. It's been very keen on observing the quality by maintaining its exact colours to different regions. Secrecy / confidentiality of manufacturing techniques have not been revealed or disclosed to anyone. Moreover, the colour accuracy is the specialty of the product; the PATENT Right is applied by Nitrogen Parameters for the

LCC Manufacturing process. The company ensures that proper training is given to extension officers and farmers with the support of the department of agriculture and the institutes so that real benefits are enjoyed by the farmers.

Today Nitrogen Parameters is an International company with global reputation and an exclusive firm in the arena of the manufacturing and supplying the LCC (Leaf Colour Chart) to many National and International, government and non-governmental agencies, institutes, universities, etc. The company supplies LCC to 45 countries across the Globe and has become very successful as the sole supplier of LCC since 2002. Nitrogen Parameters is regularly working for the promotion of LCC in different states of India. Large quantity of LCCs is supplied to the State Department of Agriculture and ICAR institutions in different states of India.

Words are too little to measure the size of Mr. Benny's accomplishments but the profound impact of LCC in the lives of farmers all over the world and to planet earth definitely matches the efforts undertaken by this single man to accomplish his God-given mission to the welfare of the world. He acknowledges the support of his parents, wife Ashly, and dedicated staff, in his pursuit.

