

Bio Data

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An eminent Plant Breeder of International repute was born in a small village, Gudavalli in Guntur Dist. of Andhra Pradesh. He obtained his Bachelors, Masters and Doctorate degrees from the Banaras Hindu University with outstanding merit. He started his career as a Lecturer in Banaras Hindu University and entered ICAR as a Scientist through Agricultural Research Service In which he ranked first in the country, before joining the ANGRAU as Associate Professor in 1981. He had a very fruitful and illustrious career as a Plant breeder and developed a number of vegetable and pulsed varieties which have revolutionized production in various niches, before his retirement from ANGRAU as Director of Extension. His contributions to the farming community

are of an immense value. During his illustrious career he held many key positions in the university. Even after his retirement is very active in developing high yielding and disease resistant varieties, hybrids of field crops as well as vegetable crops, in addition to educating farmers on sustainable agricultural practices.

...impact of Dr. Satyanarayana's contributions to the AP state and national agriculture

1. Revolutionized pulse production under rice fallows in AP

His untiring work as Pulse Breeder has resulted in the development 40 high yielding pulse varieties (13 Black gram, 9 Green gram, 11 Red gram, 5 Bengal gram and 2 Horse gram).

With the adoption of the improved varieties of Black gram and location specific production technologies under rice fallows, the overall area, production and productivity of Black gram in AP have increased from 2.7 lakh ha to 5.25 lakh ha., 0.97 lakh tones to 3.7 lakh tones and 397 kg/ha to 906 kg/ha respectively..

The impact was assessed by an independent agency, as an additional income of over Rs.360 crores in 1989 which is equivalent to over Rs.4000 crores (at current prices) annually to the state, apart from creating rural employment of 10 lakh additional man days.

This sustainable rice-pulse system is now under threat by the Yellow Mosaic Virus disease. His post retirement (2009-13) research by him has resulted in the development of 3 YMV resistant black gram varieties viz., **Sri**, **Nandi** and **Maruti** and a green gram variety **Shakti**,

For this outstanding work, he was honoured with two National Awards (Hooker award, 1999 and ISPRD award 1994)

2. Silent Revolution of chickpea in A.P.

Chickpea, a cold loving crop, was not even a minor crop prior to 1985 in AP due to short winters, terminal moisture and heat stresses. With his untiring efforts, in collaboration with ICRISAT, in developing and popularization of short duration varieties, the situation reversed and AP became the leading state in chickpea productivity. The Chickpea area increased 5 fold during 1985-2008 from a mere 1.2 ha. to 6.38 lakh ha., Productivity doubled from 750 kg to 1468 kg/ha. And 10 fold increase in production 0.9 lakh MT to 9.37 lakh MT. Dr. Satyanarayana was invited by the ICRISAT to deliver Institute seminar on Silent Revolution of Chickpea in A.P. during January 2013.

For this outstanding contribution he received two International awards viz., member of 'King Baudovin Award,' received by ICRISAT and 'Dooren Margaret Mashler Distinguished Achievements Award,' during 2002.

3. Unique Bush Dolichos and Pre dominant French bean varieties.

Beans are protein and mineral rich delicious vegetables. In order to make them yield round the year, he worked relentlessly and developed novel Bush Dolichos varieties and high quality French bean varieties.

A French bean variety '**Arka Komal**' developed by me was officially notified during 1985 as a National variety. An impact study conducted by the Economists of IIHR, Bangalore during 2003 found that **84% of the market arrivals of French beans are of 'Arka Komal' indicating its importance in the economy of vegetable growers for three decades.**

The Bush and photo insensitive Dolichos varieties are my dream plant type creation and made the availability of Dolichos beans round the year a reality. They fit in various cropping systems and help farmer to realize higher returns in a shorter period

For the work on beans I have received two National Awards (Hooker Award 1999, AICRP on Vegetable crops Award 2010) and National Fellowship on vegetables by ISVS 2012.

4. System of Rice Intensification (SRI)

SRI is a sustainable, low input, cost effective production technology which was introduced and standardized by him in India. Through Mission mode approach he demonstrated the potential of SRI technology to farmers and was appreciated at many national and international fora. **Food security Mission of Govt. of India adapted this technology to increase food production in the country in a sustainable manner** to produce more rice with less seed, water and other externally purchased chemical inputs. SRI has since become popular in many states.

Administrative Excellence

1. **Principal Scientist Pulses (1985 – 1995):** Under his leadership the Pulses Research work in AP was rated as the best in the country by the ICAR for this period.
2. **Associate Director of Research, RARS, Lam (KG Zone, 1995 – 2000):** NAARM rated the performance of RARS, Lam as most satisfactory under difficult situations based on the impact analysis during his tenure as ADR.
3. **Director of Extension, ANGRAU (2000 – 2005):** Developed lead programs like e-extension, database development, reorganization of extension education into DATTC'S etc. which prompted the Director General, ICAR, to declare ANGRAU as a model for Extension Education to all SAU's.

Awards/Honors received: 16, including 4 International, 4 National and Life time

Achievement award by NATS (USA)

Fellowship in the National Academies

1. Fellow of Indian Society of pulses Research and Development
2. Fellow of Asian Agri-History Foundation
3. Fellow of Indian society of Genetics and Plant breeding
4. National Fellow of Indian Society of Vegetable Science.

Memberships in Several Scientific Committees

Scientific Panel on Crop Science (ICAR)

Chairman, RAC, CTRI (ICAR), Rajahmundry

Quinquennial Review Team on AICRP, on Pulses (ICAR)

Quinquennial Review Team on NRC for Oil palm

Germplasm Advisory Committee on Legumes, NBPGR (ICAR).

Several RAC, DPC and Management committees of ICAR Institutes.

Variety Identification committees,

Member Selection Committee, ASRB (ICAR) . SAUs

Academics and employment

Field of specialization: Agriculture (Genetics and Plant Breeding)

Degree/ Diploma	University	Year	Class	Rank in the University
B.Sc (Ag.)	Banaras Hindu University	1967	1 st	Second
M.Sc.(Ag.)	-do-	1969	1 st (Distinction)	First
Ph.D. Genetics & Plant Breeding	-do-	1973	--	--
Diploma in German Language	-do-	1972	1 st	--

Fellowships and competitive exams

1. All India First rank in Plant breeding at the ARS examination conducted by the ASRB in 1977
2. ICAR Senior Research Fellowship 1969-72.
3. University First rank with Distinction at M.Sc.(Ag), Genetics and Plant Breeding, 1969

Employment Record:

From	To	Designation	Institute
2005 – 2007		President R&D	Nuziveedu Seeds
2007 – 2008		Head ,Agri Business Dept.	Heritage Foods Ltd.
2008 – 2019		Executive Director	NRI Agritech Pvt. Ltd.,
2019 – todate		Consultant R&D	Ruchi HiRich Seeds Pvt. Ltd.,
30-10-2000	31-03-2005	Director of Extension	ANGR Agril University
9-10-1995	29-10-2000	Associate Director of Research, RARS, Lam.	ANGR Agril University
23-7-1985	8-10-1995	Chief Scientist (Pulses) (Professor and Univ. Head Dept. of Genetics and Plant Breeding)	ANGR Agril University
11-12-1981	22-7-1985	Pulses Breeder (Associate Professor)	ANGR Agril University
22-6-1981	10-12-1981	S-2(Plant Breeding)	CTCRI,(ICAR), Bhubaneswar
29-8-1974	21-6-1981	Asst. Vegetable Breeder	IIHR (ICAR), Bangalore
19-7-1972	8-3-1973	Lecturer in Genetics & Plant Breeding	Banaras Hindu University

Research Contributions

a) varieties and hybrids developed

99 so far, in various crops

b) Contribution to basic Research

Developed new plant types of Black gram (sympodial and main stem bearing) and Green gram (multicluster and cereal mimics) and worked out their inheritance.

Mechanism and genetics of resistance to preharvest sprouting in Mungbean

Sources of resistance to various diseases and their inheritance have been worked out in different pulse crops viz., Yellow Mosaic Virus disease, powdery mildew, wilt, corynespora in black gram, angular black leaf spot and powdery mildew in Green gram and rust in Cowpea and Dolichos

The inheritance of YMV disease in Black gram was deciphered as governed by two independent dominant genes acting in complementary fashion and developed three YMV disease resistant varieties suitable for round the year cultivation.

Genetics of yield and yield components and their environmental interactions in Green gram, Black gram, Red gram, Cowpea, French bean, Dolichos, Cotton, Chillies have been estimated through quantitative genetic analysis and published.

An auto tetraploid was developed through gamma irradiation in Mungbean and a true breeding tetrasomic line (2n=22+2) was isolated in Mungbean which is resistant to sucking pests.

Employed Reverse breeding technique and developed varieties of Chillies, Marigold. Water melon which are better than the hybrids, thus made available seed at low cost to the farmers.

c).transfer of technology through extension activities

- 1) Developed **Data base for Mandal level cropping plans** based on farming situation (soil and water), constraints and potentials for all the 1106 rural Mandals of A.P.
- 2) **Organized 55 State level and 7 National Training programs and one Summer School as Course Director and 3 National AICRP workshops.**
- 3) **Conducted joint field visits, diagnostic survey and disaster management tours and developed contingency plans and disaster mitigation programs**
- 4) **Coordinated one hour daily T.V. program 'Rytumitra' through TEJA channel on agriculture between 6.00 to 7.00 PM daily for 4 years**

d) Contribution to Teaching

He **guided 10 Ph.D. and 2 M.Sc. (Ag.) students** as Major Advisor and 8 of his Ph.D students received awards for the meritorious work.

As University Head Department of Genetics and Plant Breeding during (1995 -2000) guided Teaching and Research on crop improvement and seed production programs.

Seminars and guest lectures

Organized a National Seminar on developing Vegetable varieties for round the year cultivation on 11 th January 2014.

Participated and chaired several Brain storming sessions on Pulses and Vegetables at National level.

Delivered several key note addresses on Pulses and Vegetables research and development.

Presented Institute level seminar on 'Silent Revolution of Chickpea in A.P. at ICRISAT during 2013

e). Publications

Research publications	172,
Popular articles	352
Bulletins	40
Book Chapters	5
Interactive VCD's on crop production	12

f). Externally Funded Research Projects handled.

1. **ICAR Adhoc Research project for developing Pre harvest sprouting resistance in Mungbean during 1987 – 89.**

2. Dept. Atomic Energy, GOI, Adhoc Scheme for identifying sources of multiple disease resistance to rust, PM, and leaf spot in Mungbean and Urdbean. 1995-99.
3. AP-NL project on IPM against Heliothis on Redgram 1998-2000.
4. ICAR Adhoc. Project on Genetic enhancement of Mungbean with special emphasis on Plant type. 2000-2001.
5. WWF Project on System of Rice Intensification, 2004-2005.

Contribution to the society :

Andhra Pradesh has become a surplus state in Black gram and chickpea production. Protein rich pulses have now become part of regular diet of the rural people,

Farmers have become stable with higher income, which has changed their lives in terms of health care, housing and education to their children

Soil health improved and Rice-Pulse cropping system is a sustainable.

The farm land value has increased and thus the total asset value of the farmers.

The economic impact of the technologies developed by Dr. Satyanarayana on Rice fallow pulses and chickpea was hailed by many international scientists as a model to be replicated in other farming situations.

The system of Rice intensification practices are cost effective and sustainable which helps to produce more with less seed, water and other chemical inputs. **Food security mission of Govt. of India adopted this technology to increase food production in the country in a sustainable manner to produce more rice.**

Chickpea introduced as an alternate crop to tobacco in A.P has become the major income earning crop and is sustainable, easy to cultivate and made the lives of A.P. farmers stable and secure

Photo insensitive bush Dolichos vegetable varieties giving higher income 1.5 to 2.0 lakh rupees per acre and have become boon to small and marginal farmers.

Introduced a variety of ways in which crops can be produced more abundantly and more cheaply with lessened dependence on exogenous resources through soil health improvement to produce healthy food

Alapati Satyanarayana