



CROP AND WEED SCIENCE NEWS

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CWSS expresses heartfelt condolences on the sad demise of
Prof. M S Swaminathan for his lifetime devotion in Agriculture & Rural Development



Editorial Desk

EMPOWERING WOMEN IN AGRICULTURE

The Indian economy, presently ranked fifth in the world's top economies of 2023, places significant emphasis on its agricultural sector which serves as a cornerstone, generating a substantial portion of rural employment. It is clear that agriculture must transcend its current characterization as a low-tech industry primarily comprised of small family farms. In response to this, imperative activities such as diversification, value addition, precision farming, high-tech agriculture, agripreneurship, global marketing, and organic farming are gaining prominence. Alongside this, transformation is also shifting towards the feminization of agriculture & allied sectors. The principle of 'Leaving no one behind' underscores the need to bridge the gender gap. Despite women constituting about 45 per cent of the agricultural labour force in India, only around 13 per cent of rural women are recognized as entrepreneurs, as per the National Sample Survey Organisation (NSSO).

Approximately 80 per cent of economically active women find employment in the agriculture sector. However, they represent only 33 per cent of the agricultural labour force and 48 per cent of self-employed farmers. Although 85 per cent of rural women engage in agriculture, merely 13 per cent possess land ownership rights. Access to information, inputs, and services remains a challenge.

Additionally, women bear a substantial workload, much of which remains unacknowledged as well as undervalued. Socio-cultural factors and conservative nature often impede individual ventures by women. Many women partake in joint ventures or contribute to family businesses, with only a few being recognized for their economic contributions.

Educational status is a critical factor for women's empowerment in our country. Over 38 per cent of girls in rural areas drop out before completing seven years of

schooling. As of 2011, 60 per cent of married women aged 15-49 completed ten or more years of schooling, though disparities persist in various rural areas.

The Gender Empowerment Index by the UNDP underscores global gender inequality. India ranks 122 out of 191 countries, reflecting significant disparities in empowerment and labour market participation between men and women. The Ministry of Agriculture and Farmers' Welfare (2020-21) notes a substantial wage gap between male and female field labours, estimated as 80 per cent earnings of male counterparts.

Government schemes, alongside initiatives from state and private institutions, have made strides in encouraging rural women towards entrepreneurship. Programs like NABARD's Bank Linkage Programme, as well as training and capacity-building efforts by regional agriculture departments, aim to empower women with training in various aspects of agriculture, business, entrepreneurship, and skills development.

INTERNATIONAL YEAR OF MILLETS

The year 2023 is earmarked as "International Year of Millet". It is repository of protein, fibre, vitamins and minerals, widely grown around the world as rainfed



Director ICAR-ATARI, Kolkata addressing at 'Millet Mela' organized by Howrah KVK of BCKV on 25th July, 2023

cereal crops for safe and healthy food having potentiality to reduce diabete and other common health problems. Demand for once poor men's food millet (coarse grain with low price) is increasing on health ground. There are two types of millet, coarse and small. The area coverage under millets is 15.48 million hectares and it accounted for about 7 per cent of the gross cropped area in the country and per capita availability is 12.3 kgs (APEDA 2023) based on 2021-22. India is the largest producer of millets holding 41% of world share. In eastern region, the millets cultivation is in subsistence level of no-profit no-loss and therefore, the marketable surplus is very low. The farmers could earn profit if value-added products are made along with raw millets. These "holy food" crops are grown either in *autumn* or *rabi* season as low water consuming crops. Cultivation of millets can be popularised through (a) encouraging and supporting farmers to adopt millet cultivation through subsidies and better market access, (b) promoting millet based value-added products to increase demand and profitability, (c) improving millet seed quality and distribution through government and private initiatives, (d) offering training and extension services to farmers on the latest millet cultivation techniques and (e) promoting intercropping with millets to increase farm efficiency and income.

VARIETY DEVELOPMENT

Paddy

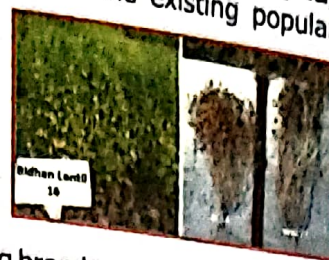
Bidhan Suruchi (IET25701): High-yielding variety of BLB resistance and P-deficiency tolerance released on 2019 vide CVRC gazette notification on 02.08.2019. Yield Potentiality: 5585 kg/ha (*Kharij*) **6346 kg/ha** (*Boro*) with a long slender grain (Like Shatabdi), duration 110-115 days. The farmers have already accepted it.



Lentil

Bidhan Lentil 16 (BL16): A short duration (109-115 days) new lentil variety developed from LL56x LL4710, has been released vide Gazette notification, **S.O. 4065(E) of 31.8.2022** from the Ministry of Agriculture and Farmers Welfare, Government of India. The mean yield on multi locational trial by AICRP

(MULLaRP) and Farmers' field: **1552kg/ha**, almost 10% higher than the existing popular cultivar, WBL77 (1414kg/ha) and suitable for rice-fallow late sown condition. BCKV breeder seed production unit has produced 200kg breeder seed in 2022.



GEOGRAPHICAL INDICATION OF GOBINDABHOG AND TULAI PANJI RICE: REGISTRATION OF AUTHORIZED USERS



Two popular aromatic rice, namely *Gobindabhog* (GI No. 531) & *Tulaipanji* (GI No. 530) have been registered as GI products during 2017. State Agricultural Management & Extension Training Institute, RKM, Narendrapur, West Bengal (SAMETI) and BCKV are jointly owners of GI-tagged *Gobindabhog*, while SAMETI and UBKV for *Tulaipanji*.

PLANT GENOME SAVIOUR AWARD (2020-21) WITH TECHNICAL SUPPORT FROM BCKV



BCKV extends technical support to different farmers' organizations and farmers in different districts of South Bengal for germplasm conservation of crops. With technical guidance of RKVY Project on 'Bengal Aromatic Rice', Dalpur Sree Sree Gyananonda Saraswati Ashram, Bankura got 'Plant Genome Saviour Community Award (2020-21)' and Mr. Nimai Mondal, Nadia received 'Plant Genome Saviour Farmer Recognition (2020-21)' from the President of India in presence of the Union Agriculture Minister, DG of ICAR, Chairman of

PPV&FRA on 12 September, 2023 at NASC, Pusa, New Delhi. Prof. Mrityunjay Ghosh and Dr. S. Banerjee attended the programme as the Facilitators.

Purple Tomato

Anti-oxidant rich breeding line developed at Department of Vegetable Science, BCKV, which contain high lycopene, anthocyanin and ascorbic acid. It was developed through combining lycopene enhancing mutant gene, *dg* or *hp-2^{as}* and anthocyanin synthesizing *Aft* gene based on morphological marker.



Kharif Onion

Production technology of *Agrifound Dark Red* and *Baswant-780* varieties has been successfully standardized for cultivation by the Department of Vegetable Science, BCKV in the uplands of West Bengal particularly in the western red and lateritic zone for domestic supply in off-season of the state i.e., July to February.



Brimato

Technology has been developed at ICAR-IIVR, Varanasi for production of grafted brinjal & tomato in same plant through dual or multiple grafting. Grafting tomato on brinjal root stock is done by side/slice method, giving 5-7 mm slanting cuts (45° angle) in both rootstock and scion, and transplanted in field after 15-18 days of grafting. Fruit yield from experimental plot was 2.38 Kg tomato and 2.68 Kg brinjal.



Soil Health Card

The major challenges of this century are food security, soil health and environmental quality. On-farm assessment of soil health is recommended to assist farmers in evaluating the effects of their prevailing as well as changed management practices like tillage, cover crops, organic amendments and crop rotation. Soil chemical constraints can easily be addressed through addition of chemical amendments (lime or gypsum) and fertilizers.

Under the Soil Health Cards (SHCs) Scheme, a massive programme of soil sampling, testing and

generation of SHCs was launched to assist Governments in issuing soil health cards to all farmers in the country. The SHC portal has been revamped by the Department of Agriculture, Cooperation & Farmers Welfare, GoI., integrated with Geographic Information System (GIS) system so that all the test results are captured and seen on a map along with fertilizer recommendation through Soil Test Crop Response (STCR) prescription.

IMPACT OF DIGITAL TECHNOLOGY IN AGRICULTURE

Mobile and internet technology significantly improved the efficiency of farmers and impact on agricultural profits by 41 per cent, with non-agricultural profits exceeding 31 per cent. In the year 2022, approximately 25 per cent of the farmers used mobile phones to access information about agriculture and livestock, 23 per cent to buy and sell products, and 18 per cent to receive news updates.

'The Rising Connected Consumer in Rural India', a study by the Boston Consulting Group, share of adapting digitalization in rural India has jumped to 48 per cent by 2020. From the *Krishi Jagran* app that provides all agriculture-related information to *Bijak* App that connects verified agri-traders to India. There are several agriculture-based apps that have gained popularity over the years such as *IFFCO Kisan Agriculture*, *Krishi Jagran*, *Pusa Krishi*, *Agri App*, *Kheti-Badi*, *Agri Market*, *Shetkari*, *Kisan Suvidha*, *FarmBee App*, *KVSMT*, etc. India witnessed significant benefits during the COVID-19 pandemic through digitalization.

INTEGRATED FARMING SYSTEMS (IFS)

Indian Council of Agricultural Research (ICAR) and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) are constantly propagating the concept of Integrated Farming Systems (IFS) which has gained profound recognition by FAO since thirty years. At present the organic and natural farming are coming to fore for mobilization of all agricultural & allied location specific resources. Regional level agricultural & allied institutes are also capable to deliver the technologies to the local self-government, cooperatives and non-governmental organizations. Mind-set is necessary to utilize the efficiency of technocrats in rural level development.

AGRICULTURE EDUCATION: SHIBPUR TO MOHANPUR

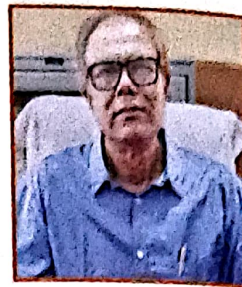
Location and Institute

- 1898: **Bengal Engineering College** (Civil Engineering College) started Agriculture as a subject (Up to 1909).
- 1904: Establishment of **Imperial Agricultural Research Institute (IARI)**, Pusa, (between Samastipur and Muzaffarpur), Shifted to New Delhi (1934).
- 1906: **Agriculture College, Bhagalpur**, Bengal Province started with Diploma in Licentiate Agriculture (L. Ag.), Now Bihar Agriculture University.
- 1906: Degree Collages, in Moynensing (Bangla Desh), Coimbatore Agriculture College (Tamil Nadu), Poona

- (Maharashtra), Laallpur, Punjab (now at Pakistan).
- 1939: **Faculty of Agriculture, Dacca University, Tejgaon.**
2- Year B.Sc. degree course in Agriculture, and 2-year
Post degree course as Bachelor of Agriculture (B. Ag.).
In 1945, Two courses were merged at three year
Degree course in Agriculture. **Barrackpur
Agricultural Institute** (Monirumpur,) under Calcutta
University.
- 1949: **University College of Agriculture, Jhargram,**
Calcutta University. (Intermediate course: 2-year (I. Sc.)
Produced only two batches.
- 1952: **State College of Agriculture, 3- Year Degree Course,**
B. SC (Ag.), Calcutta University shifted from Jhargram to
Ranikuti, Tollygunge.
- 1954: **Post Graduate in agriculture** at Collage of Science,
Calcutta University, 35, Ballygunge Circular Road,
Kolkata.
- 1954: **Foundation stone was laid by Prime Minister
Jawaharlal Nehru for State college of
Agriculture at Mohanpur, Haringhata on
November, 1954 (Request of Dr. Bidhan Chandra
Roy, Chief Minister, West Bengal).**
- 1956: **Department of Agriculture and Veterinary
Sciences** upgraded as Faculty of Agriculture. D. Phil
(Agri) started in Calcutta University.
- 1958: **State College of Agriculture shifted at Mohanpur,
(Birla building- July, 1958).**
- 1960: **Establishment of Kalyani University** with a view to
a separate Agriculture University.
- 1960: **State College of Agriculture (Birla) transferred
from Calcutta University to Kalyani University,
November, 1960 (Except PG Courses).**
- 1961: **Post Graduate level of education** started at Faculty
of Agriculture, Kalyani University from 1962 at proposed
Veterinary College in Kalyani (Research Complex,
BCKV). In 1970 Kalyani building earmarked for
Agricultural research based on **Report of B. K. Guha
Commission.** (PG education finally shifted to
Mohanpur Faculty building in 1987. All Research Projects
and laboratories are in Research Complex, BCKV).
- 1963: **Viswa- Bharati University** started B. Sc. (Ag.) course at
Sriniketan (PSB/PSS).
- 1969: **Historic Student Movement** for separate Agriculture
University (74 days strike).
- 1971: 3-Years graduation course converted at 4-Year B. Sc.
(Ag.) Hons.
- 1974: **Bidhan Chandra Krishi Viswavidyalaya, Mohanpur,
Nadia, West Bengal (1st. September).**
**Foundation stone was laid by Mr. Fakruddin Ali
Ahmed, President of India (Administrative
Building of BCKV).**

PROUD MOMENTS FOR SOCIETY

Prof. D. Basu, a life member of CWSS, presently joined as Vice-Chancellor, Uttar Banga Krishi Viswavidyalaya. At present he is on Lien from Department of Agricultural Extension, BCKV, West Bengal and earlier he was Professor of Agricultural Extension in Visva-Bharati University, Sriniketan (2009-11). Dr. Basu is the fellow of Indian Society of Extension Education and received prestigious K. N. Sing Memorial Award as Best Extension Scientist of the country in 2021. He has written twenty-five text/reference books for UG & PG students and authored 151 research articles in different journals of repute.



Prof. G. Saha, a life member of CWSS, Professor of Agro Meteorology and Physics has taken over the charge of Vice Chancellor, Bidhan Chandra Krishi Viswavidyalaya with effect from August, 2023. He is trying his best to mitigate the constraints prevailing in the Viswavidyalaya, especially in relation to academic upliftment. He has published 52 Papers in peer reviewed international and National Journals and two book chapter. He was associated with a good numbers of National and International funded project.



BOOK PUBLICATION

CWSS congratulates Dr. Sanjoy Shil, Assistant Professor of Plant Physiology, BCKV and a Life Member of CWSS for his published book entitled "*Plant Physiology-A Text Book*" (Kalyani Publishers, New Delhi).

CONTRIBUTORS

Prof. P. Hazra, Prof. T. N. Roy, Prof. S. Bhattacharjya, Prof. Mritunjoy Ghosh, Prof. S. K. Pal (Soil Science).
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