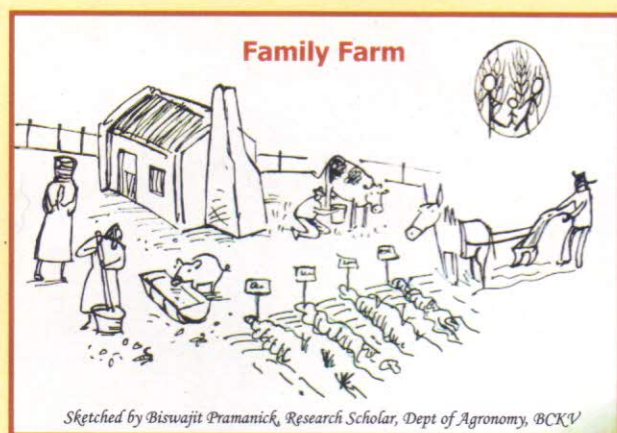


Family Farming : The Way of Life and Livelihood

India, with an alarming population of more than a billion, is now passing through a critical crisis owing to growing inequities, throttling rural poverty, oppressive hunger and malnutrition. As maximum portion of our population depend mainly on farming for their livelihood, family farming can play a very important role in the rescue of the nation and the world as a whole from this critical food crisis. Several independent studies have



revealed the fact that food crisis is knocking at the door and industrial agriculture models are either stagnating or failing. They suggest that small holders and ecological agriculture play a key role in achieving multiple objective : food and nutritional security, better rural livelihood and ecological stability. This is reflected in the observance of 2014 as International Year of Family Farming by the United Nations with the support of several countries. The International Year of Family Farming 2014 is an initiative promoted by the World Rural Forum and supported by over 360 civil societies and farmers' organizations from 60 countries across five continents. This worldwide celebration, declared by the United Nations General Assembly, aims at becoming a tool to stimulate active policies for sustainable development of agricultural system- based farmer families, communities, indigenous groups, cooperatives and fishing families.

All this work is being made from the perspective of effectively combating poverty and hunger and search for a rural development based on the respect for environment and bio-diversity.

Strengthening Family Farming is the most efficient means to combat hunger and poverty. Seventy percent of the food consumed in the world is produced by Family Farming, in all its diversity and 40% of the families in the world lives on this activity.

The assumed trickle down effect of benefit through prevalent economic growth strategies is not

happening enough, while increasing inflation and accentuated climate changes are pointing out that future challenges are tougher to tackle. There is a belief that corporatisation is the *mantra* with choices, control and access to resources shifting away from farmers' hands. Besides, doles and subsidies are being highlighted as solutions. While they do provide some relief, to a limited extent, they are in fact a short term measure, a 'band-aid' strategy.

In India, traditionally, farming has been family based and majority of them are small holders. The success of family farming lies not in 'specialisation' but in practising farming to meet diverse household needs rather than market opportunities alone.

Family farming is not just about the size of farm , it is more about the way people farm and live. Thus "Family farming is a way of live and livelihood" – there are unique advantages – the security of access and control over resources, meeting multiple needs of the family – food and income, the relationships with nature, the bonding with the past, present and future; ensuring freedom from external exploitation as well as freedom for doing in our own way.

– Editors

The CWSS IXth Annual Conference 2013



The graceful presence of Prof C R Kole, Vice chancellor, BCKV; Prof B Mondal, Pro-vice chancellor, BCKV; Mr P Mazumdar, Advisor, Agriculture and Allied Sectors to the Hon'ble Chief Minister, Govt of West Bengal; Dr D S Rana, Principal Scientist, ICAR and Secretary, ISA, Pusa, New Delhi; Dr B S Mahapatra, Former Director, CRIJAF, ICAR and Professor of Agronomy, GBPUAT; Dr B Gangwar, Project Director, DFSR, ICAR, Modipuram; Dr A V Dhuri, Vice-President-Business Development, Excel Crop Care Ltd, Mumbai; Dr R Kumar, Assistant Director General (Co-ordination), ICAR, Krishi Bhavan, New Delhi; Prof A Bhattacharyya, President, CWSS; Prof R K Ghosh, Secretary, CWSS in the CWSS IXth Annual Conference held on 30 September 2013 at the Human Resource Development Centre (Farmers' Training Centre), BCKV, Kalyani.

Study of Organic Crops Finds Fewer Pesticides and More Antioxidants

Adding fuel to the debates over the merits of organic food, a comprehensive review of earlier studies found substantially higher levels of antioxidants at the same calorie level and lower levels of pesticides in organic fruits, vegetables and grains compared with conventionally grown produce.

The conclusions in the new report run counter to those of a similar analysis published two years ago by Stanford scientists, who found few differences in the nutritional content of organic and conventionally grown foods. The Stanford study, like the new study, found that pesticide residues were several times higher on conventionally grown fruits and vegetables, but played down the significance, because even the higher levels were largely below safety limits.

The Organic Trade Association, an industrial organization, estimated organic food sales last year in the United States at \$32.3 billion, or just over 4 percent of the total market.

In the new study, an international team of scientists did not conduct any laboratory or field work of their own. Instead, they compiled a database from 343 previously published studies and performed a statistical procedure known as a meta-analysis.

Over all, organic crops contained 17 percent more antioxidants than conventionally grown crops, the new study



found. For some classes of antioxidants, the difference was larger. A group of compounds known as flavanones, for example, were 69 percent higher in the organic produce. (At very high quantities, as in some supplements, some

antioxidants have been shown to be harmful, but the levels in organic produce were not nearly that high.)

The findings fit with the expectation that without pesticides, plants would produce more antioxidants, many of which serve as defence against pests and diseases. The study also found that organically produced foods, particularly grains, contain lower levels of cadmium, a toxic metal that sometimes contaminates conventional fertilizers. Researchers were surprised by that finding; there was no difference in other toxic metals like mercury and lead.

Advocates of organic movements wanted organic foods because they believed they are better for the environment and wants to avoid pesticides. If they are also more nutritious, that's a bonus.

Bacteria Found in Bees Show Potential as an Alternative to Antibiotics

Scientists have shown that a unique group of bacteria found in the stomach of bees can fight antibiotic-resistant superbugs in the lab. Antibiotic resistance is an increasingly serious problem in the western world, and in April this year,

the World Health Organisation declared it to be a major threat to public health. For centuries, people have used raw honey to help fight infections, but scientists have struggled to figure out what gives it its antimicrobial properties.

Now a team of researchers from Lund



University in Sweden has identified a unique group of 13 lactic acid bacteria (LAB) that come from the honey-stomach of bees, and are found in fresh honey, having an impressive ability to fight pathogens. The honey-stomach is one of the two stomachs found in bees and it stores nectar which the worker bees later suck out and store in the hive.

Together, these live bacteria produce a number of active microbial compounds, such as hydrogen peroxide, fatty acids and anaesthetics that can kill other harmful bacteria. It is believed that this is the formula that protects the bee colony against collapse. Unfortunately, these LAB are processed out of the honey we buy in shops, but the researchers now believe they could be used to help treat antibiotic resistance.

The team tested the bee bacteria in the lab against pathogen strains that cause serious infections in humans, including methicillin-resistant *Staphylococcus aureus* (MRSA) which can lead to fatal staph infections. The LAB was added to these superbugs and impressively it counteracted all of them. The results are published in the *International Wound Journal*.

The scientists also mixed the LAB with honey and applied it directly to horses having wounds that wouldn't heal and had been resistant to other treatments. After using the honey/bee bacteria substances all of the wounds healed up. So far, the bee bacteria has been tested against human pathogens in the lab, so we don't know whether they'll be as effective on human wounds; but these results are extremely promising.

When used alive, these 13 lactic acid bacteria produce the right kind of antimicrobial compounds as needed, depending on the threat. It seems to have worked well for millions of years of protecting bees' health and honey against other harmful microorganisms. However, since store-bought honey doesn't contain the living lactic acid bacteria, many of its unique properties have been lost in recent times.

Peeping Through the Eyehole at the World

Dr L Das and his two students named Ms M Dutta and Mr J K Meher visited Meteorological Institute of Norway for an interactive session and training programme on "Empirical Statistical Downscaling" to improve the collaboration and Indo-Norway ongoing project activities entitled "The response of hydrological system in India to climate change (INDICE)" during 10 March to 12 April, 2014.

Dr T Mondal and Dr A K Pal, Associate Professors, Department of Floriculture & Landscaping and Dr N C Chattopadhyay and Dr A Pariari, Associate Professors, Department of Spices and Plantation Crops attended "International Conference on Agriculture and Animal Sciences (SLFI)" held in Colombo, Sri Lanka during 8-9 July, 2014.

Prof S Acharya attended "3rd International Conference on Climate Change and Social Issues 2014" organized by the International Centre for Research and Development (ICRI) held in Colombo, Sri Lanka during 30 July – 01 August, 2014.

Dr I Chakraborty, Associate Professor, Department of Post-Harvest Technology of Horticultural Crops and Dr M Poduval, Associate Professor and OIC, AICRP on Cashew attended "International Research Symposium on Agricultural Sciences" held in Colombo, Sri Lanka during 11-12 August, 2014.

Prof P K Sarkar, Prof S Das, Prof P S Nath and Prof G C Hazra attended the "IUPAC (International Union for Pesticide and Applied Chemistry) organized by the American Chemical Society (ACS) held in San Francisco (USA) during 10-14 August, 2014.

Dr L Das, Associate Professor and Head of the Department of Agricultural Meteorology and Physics, BCKV, participated in the 2nd WCRP (World Climate Research Program) - CORDEX (Coordinate Research on Downscaling Experiments) workshop on "Statistical downscaling" held at University of Buenos Aires, Argentina from 29 August to 01 September, 2014. He has also been nominated as a contact Leader person from South-Asia domain for CORDEX on statistical downscaling modeling programme.

Dr A Basu, Professor of Plant Pathology attended "International Conference on Sustainable Agriculture, Food and Energy (SAFE) 2014" held in Bali, Indonesia during 17-20 September, 2014.

Prof M M Adhikary, Department of Agricultural Extension and Prof A M Puste, Department of Agronomy attended "14th IWA International Conference on Wetland Systems for Water Pollution Control (ICWS2014)" held in Tongji University, Shanghai, China during 12-16 October, 2014 organized by the International Water

Association (IWA) and Tongji University, Shanghai, China.

Dr K Brahmachari, Associate Professor, Department of Agronomy, attended and delivered a speech on "Small Scale Farming" in the seminar styled "From extreme poverty to human dignity" jointly organised by the European Union and the NETZ, Germany at Dhaka, Bangladesh on 19 October, 2014.

AGRONOMY PRACTICAL MANUAL

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ADVANCE TECHNIQUES OF WEED MANAGEMENT USING BIO-HERBICIDES
And
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SURVEILLANCE, BIOLOGY AND MANAGEMENT OF INVASIVE WEEDS



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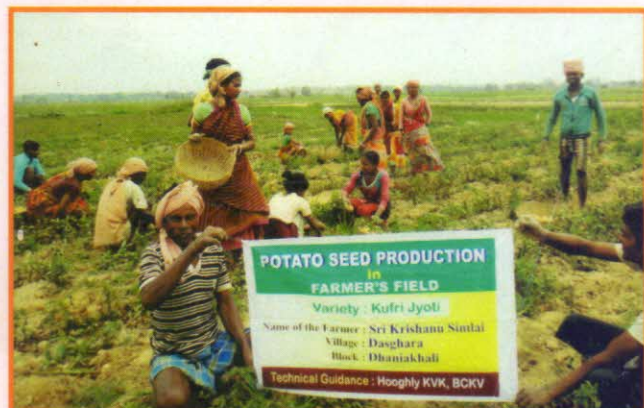
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The Agronomy Practical Manual Published with the Financial Assistance of the ICAR

The CWSS : Gradually Gaining Popularity

The society is gaining popularity day by day as evident from its membership details and the wide circulation of its publications in the CAB, ICAR, Agricola etc. The Journal of Crop and Weed is published biannually in June and December every year. The journals are available both Online (ISSN 2349 9400) and in printed version (ISSN 0974 6315). Online version of the Journal is available at www.cropandweed.com. The Journal of Crop and Weed is ranked for 2013 by the NAAS (3.59), Index Copernicus International (ICI- 5.99), International Scientific Indexing i.e. ISI (Impact Factor 1.246). The Journal has received the CODEN code: JCWOAT and has been added to the data base of the Electronic Journals Library, the National Science Library (NSL), New Delhi. Both the issues of all the last ten volumes are being published regularly. The CWSS Annual Crop and Weed Science News are also being published since 2004 (CWSS NEWS 1-10).

Certified Potato Seed Production Programme by Hooghly KVK



Sri Krishanu Simlai, a progressive farmer of Dasghara, Hooghly produces certified potato seed tuber in his own field of Hooghly and Bankura with the technical support from Hooghly Krishi Vigyan Kendra. In the previous year after procuring foundation seed from CPRI, Patna Sri Simlai produced 100 t of certified potato seeds from 50 bighas of land.



Going Non-GE: Tight Margins Force Some Farmers to Reconsider Biotech Seed

United States farmer Matt Hughes said his Bt hybrid corn performed well this year. Still, the Illinois farmer is considering switching to conventional, non-genetically engineered (GE) seed next year. "The problem is we've seen a 50% decline in our commodity prices recently," Hughes explained. "Last year, our margins suffered dramatically, and we're below cost of production today even with increased yields." For many Midwestern producers, high seed prices have become a burden. In the current market, this article states, biotech seed could be the low-hanging fruit for farmers who want to cut input costs in 2015. Hughes said other agricultural inputs, such as fertilizer, have begun to adjust to the lower commodity prices. High-tech seed, says Robert Hill, an economist and owner of Caledonia Solutions, tends to be "sticky downward." Hill adds, "Seed companies are accustomed to selling into a high-profit environment. Now the economic picture has changed dramatically for the major Midwest crops, and

there is good reason to question seed pricing strategies." For Hughes, switching away from Bt traits will mean he has to return to using planting-time soil insecticides, but they are readily available and cheap. "The cost of seed has outpaced the cost of insecticides," he noted. There are also an increasing number of non-GE seed varieties available. "It's driven by consumer demand," he said. "If consumers want non-GMO and are willing to pay for it, we have to react to that."

Source: DTN The Progressive Farmer (10 Oct 2014) [<http://www.dtnprogressivefarmer.com/>]

Onion and gladiolus : host crops of *Aphelenchoides besseyi*

The Scientists of the AICRP on Nematodes, Kalyani Centre attended the 18th Biennial Group Meeting and Workshop of AICRP on Nematodes held during 3-5 March, 2014 at Kerala Agricultural University, Thiruvananthapuram, Kerala. The Salient information are as follows:



- ✱ Out of 16 coordinating centers of AICRP on Nematodes in India BCKV, Kalyani is one amongst the 4 outstanding Centers with regard to the Nematological Research.
- ✱ Infestations of Foliar Nematode, *Aphelenchoides besseyi* were recorded in gladiolus in Nadia and in onion in Midnapore, Hooghly, Nadia and Murshidabad districts. Onion and gladiolus were first reported as the host crops of *A. besseyi* from India by AICRP on Nematodes, Kalyani Centre, BCKV.

"The most effective way to combat hunger and malnutrition is to produce food near the consumers, precisely what Family Farming does, not the large itinerant investors. To strengthen the work of the millions of family farmers in the world i.e. nearly 2,500 million people in rural areas living on agriculture in developing countries, it is necessary for countries to guarantee the protected access to land, water, sea and other natural resources. The right of people to produce their own food needs to be acknowledged."

Jose Antonio Ozaña (World Rural Forum), Coordinator of the International Year of Family Farming-2014 Civil Society Programme.

Chief Editor : Dr K Brahmachari, Dept of Agronomy, BCKV, Mohanpur, Nadia, WB

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