The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a non-profit, non-political organization that conducts agricultural research for development in Asia and sub-Saharan Africa with a wide array of partners throughout the world. Covering 6.5 million square kilometers of land in 55 countries, the semi-arid tropics have over 2 billion people, of whom 644 million are the poorest of the poor. ICRISAT innovations help the dryland poor move from poverty to prosperity by harnessing markets while managing risks – a strategy called Inclusive Market-Oriented Development (IMOD).

ICRISAT is headquartered in Patancheru near Hyderabad, Telangana, India, with two regional hubs and six country offices in sub-Saharan Africa. It is a member of the CGIAR Consortium. CGIAR is a global research partnership for a food secure future.

Japanese at ICRISAT

Governing Board Members

O Ito (2002 to 2008)
T Yoneyama (1998 to 2002)
Y Tamaki (1995 to 1998)
A Tanaka (1990 to 1996)
K Kumazawa (1983 to 1989)
I Kobori (1976 to 1982)

Scientists (Past and Present)

N Ae
J Arithara
H Hirata
S Ishikawa
K Katayama
K Maeda
R Matsunaga
T Matsumoto
T Nakamura
K Okada
H Nakano
Y Nishimura
T Omori
T Takenaga
J Kashiiwagi
A Kubota
A Yamamoto
S Uchida
K Hayashi
K Kubo
K Otsuka
K Kajisa
U Koganemaru
Y Sawada
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S Ito
K Isawa
Y Enoki
K Ando
K Ohkura
H Shinjo
U Tanaka
R Miura
S Tobita
T Kumashiro
O Koyama
F Mizutani
K Kamidohzono
T Wakatsuki
T Terakuchi
T Watanabe
Hara
Hiroshi Uchino
T Kurai
Takoji W Tusak

Other updates

ICRISAT to host the 20th ASPA Annual conference in 2016

ICRISAT will host the 20th Asian Science Park Association (ASPA) Annual Conference in Hyderabad in 2016. This was confirmed by Director General William D. Dar to the ASPA Board represented by Chairperson Dr Jong Hyun Lee.

The conference will provide Science and Technology Parks (STPs) in India with an opportunity to network with the global community of STPs and promote cross-country linkages, thereby allowing Indian entrepreneurs to explore global market linkages and strengthen technologies beyond the national borders. ASPA is an international nongovernmental organization established in Japan in 1997 to enable joint developments in the areas of scientific technology, industry and economy in Asia.

ICRISAT scientist receives Niigata International Food Award

Dr CL Laxmipathi Gowda, Deputy Director General - Research, ICRISAT, received the 2014 Sano Touzaburo Special Prize from Japan’s Niigata International Food Award Foundation, at award ceremony held in Toki Messe International Conference Hall, Niigata, Japan on 29 October. The Niigata International Food Awards, considered as Asia’s version of the World Food Prize, honor outstanding individuals whose achievements greatly contribute to the peace and well-being of the world by improving the supply of quality food, or by improving peoples’ understanding of the role food plays in their health.

Dr Gowda is known for his significant contribution in developing improved chickpea (both desi and kabuli) cultivars with high yield and resistance to diseases and pests.

Japan and ICRISAT

For more than three decades, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has been working with the Government of Japan through the Ministry of Foreign Affairs (MOFA), Ministry of Agriculture, Forestry, and Fisheries (MAFF) and Japan International Research Center for Agricultural Sciences (JIRCAS) to improve agriculture in the dryland tropics.

Collectively the strategic thrusts of the collaborations are designed to help the poor smallholder farmers navigate a pathway out of poverty by establishing a foundation of food and livelihood security. The partnerships exemplify ‘Science with a Human Face’. ICRISAT and JIRCAS strengthened their collaboration for research on biological nitrification inhibition capacity of crops.

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Collaborative Research Projects

The ability to release inhibitory compounds from roots to regulate/control soil nitrification is termed as 'biological nitrification inhibition (BNI)'. The existence of such a phenomenon in sorghum (Sorghum bicolor) has been established and characterized.

The research at JIRCAS further provides evidence that the root exudates of sorghum show substantial inhibitory effect on nitrification process in the bioassay system that determines BNI activity. Thus, sorghum is considered as a potential target crop for BNI characterization under controlled plant growth environments in a growth chamber and glasshouse supplemented with field studies to establish and confirm this novel attribute. The BNI attribute will have a multi-functional role in protecting nitrogen from nitrification and associated nitrogen losses, which thus can have potentially dramatic effects on improvement of N uptake, N use efficiency in sorghum and sorghum-based cropping systems.

Sweet sorghum developed by ICRISAT has an ability to produce a considerable amount of carbohydrates and can be used for multiple purposes such as human foods, animal feeds and bio-fuel. Although production of sweet sorghum may provide poor farmers in the semi-arid tropics more income, it may require more fertilizer input than traditional grain sorghums. In order to establish a more efficient use of nitrogen fertilizer that may still be too costly for those poor farmers, and to propose a sustainable cropping system that has low impact on environment, BNI should be considered when a guideline for soil fertility management is developed for sweet sorghum. It is expected that fertilizer use efficiency will improve and environmental impact will be greatly reduced through appropriate management of BNI.

The research project “Development of sustainable soil fertility management for sorghum and sweet sorghum through effective use of biological nitrification inhibition (BNI)” was funded by the Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan, and conducted at ICRISAT. This project consisted of 3 sub-themes: 1) Clarification of BNI in sorghum and sweet sorghum fields; 2) Quantitative evaluation of nitrogen dynamics in sorghum and sweet sorghum fields and clarification of the effect of BNI on nitrogen dynamics; and 3) Development of a new nitrogen fertilization guideline for sweet sorghum through adequate management of BNI. This project started in May 2009 and concluded in October 2014.

The project ‘Development of genetic markers for sorgoleone (a BNI component) release capacity in sorghum (Seed multiplication of a sorghum GCP-reference germplasm set collection)’ concluded in 2013.

Promoting Climate-Smart Agriculture

Climate change is happening even faster, and with more damaging effects, than previously anticipated. Most climate scenarios depict a world warmer by two degrees or more in the coming decades, predicting sharp crop yield declines for major grains like wheat and maize.

To face the challenge of such drier and warmer climate, ICRISAT has joined efforts to promote the traditional climate hardy grains such as pearl millet, other small millets and sorghum which are often the only crops adapted to hot, dry climates and erratic rains. This is particularly important as these resilient grains are also essential for the food and nutrition security of millions of farming families in arid lands. Millets, for instance, are nutritious, gluten free, rich in protein and iron, virtues that need to discovered and promoted across the globe.

Over the years Japan has also invested in ICRISAT’s research activities especially in:
- Application of biotechnology for breeding the crops that are adapted to the semi-arid tropics
- Selection and identification of genetic resources for crop improvement
- Improvement in fertility of sandy soils in semi-arid West Africa through organic matter management.