

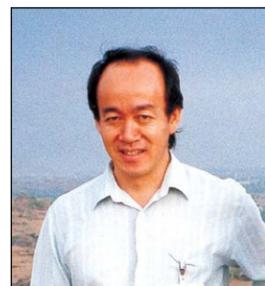
Japanese at ICRISAT



T Yoneyama
(1998 to 2002)

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)



O Ito
(2002 to 2008)

Scientists (Past and Present)

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

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.

ICRISAT is a member of the CGIAR Consortium. CGIAR is a global research partnership for a food secure future.

Collaborating
to lessen
poverty and
enhance
livelihoods

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.



Dr Masa Iwanaga, President, JIRCAS (Left); and Dr Tomoyuki Kawashima, JIRCAS (Right); with ICRISAT Director General Dr William D Dar at the ICRISAT Headquarters in India.

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.

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 be discovered and promoted across the globe.

- A recently installed **LeasyScan phenotyping** platform at ICRISAT headquarters, the first of its kind in the CGIAR, will catalyze plant breeding for drought adaptation. The platform is also helping improve crop modelling under various drought conditions, and speed up the development of improved drought-tolerant cultivars. Global warming will also have implications on the way farmers manage their crops. ICRISAT's Center of Excellence on Climate Change Research for Plant Protection looks at the impact on insect/pest risks on chickpea and pigeonpea.



Popularizing the uptake of nutri-cereals

ICRISAT believes that nutri-cereals are under-recognized for their value and are important for diversification and complementing other foods. In particular they are critical for both farmers and consumers because of:

- high nutritional value
- resilience under extreme weather conditions – critical in future with climate change
- need for both diet and on-farm diversity
- multiple untapped uses
- large scope for further development
- appropriate for fighting poverty and food insecurity

- The ICRISAT Smart Food campaign aims to build a stronger scientific case for more support to nutri-cereals. The campaign will strive to build a new image around what have been the traditional crops and foods in many areas. A globalized diet now exists and the trend in developing countries is that more nutritious foods are not preferred as they are seen as 'food for the poor' and not as status foods or crops by consumers and farmers. The campaign is expected to include the creation of an overall campaign branding, messaging, scientific backing and key creative material to highlight the messages.

