



INTERNATIONAL SOCIETY FOR HORTICULTURAL SCIENCE

Section Tropical and Subtropical Fruits

Newsletter No 8 January 2013

Dear Colleagues,

Wish you and your family a Happy, Healthy and Prosperous New Year.

In the last six months (July - December 2012), the Section has organized symposiums on Persimmon at Wuhan, China, Jackfruit and other Moraceae at Mymensingh, Bangladesh and Litchi, Longan and other Sapindaceae fruits at White River, South Africa. We have in our calendar many exciting events in 2013 and 2014 (Please visit for details: www.ishs.org/calendar) including the 29th. International Horticultural Congress to be held at Brisbane, Australia from 17 to 22 August, 2014.

I will be pleased to receive comments and suggestions about the e-newsletter and will look forward for your inputs for the next issue.

With best wishes,

Professor Dr. Sisir Kumar Mitra
Chair

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News Focus

Israeli water management scientist Daniel Hillel wins 2012 World Food Prize

A scientist from Israel, Dr. Daniel Hillel who pioneered a radically innovative way of bringing water to crops in arid and dry-land region was named the winner of the 2012 World Food Prize in a ceremony held at US State Department. The award was conferred to him for his scientific achievement and also his dedication to working with people across borders, to help improve food security for all. Dr. Hillel's work represents a breakthrough achievement addressing a problem that so many countries share in common: water scarcity.

Born in the United States but raised in Israel, Dr. Hillel was first drawn to the critical issue of agriculture and water scarcity during his days living in the highlands of the Negev Desert. His research led to a dramatic shift from the prevailing method of irrigation. Previously, in the first half of the 20th century, farmers typically applied large amounts of water in brief periodic episodes of flooding to saturate their fields, followed by longer periods of manufactured drought to dry out the soil. The new methods conceived and developed by Dr. Hillel applied water in small but continuous amounts directly to plant roots, dramatically cutting the amount of water needed to nourish crops, maintaining their consistent health and resulting in higher crop yields to feed more people.

Dr. Hillel's water management concepts promoted by the UN Food and Agriculture Organization have spread around the world and are now used on more than 6 million hectares worldwide. By integrating complex scientific principles, designing practical applications and achieving wide outreach to farmers, communities, researchers and agricultural policymakers in more than 30 countries.

Source: fnbnews.com



Recurring Droughts Highlight Need to Better Manage Water Resources, Safeguard Food Security

According to the FAO, drought in some parts of the world has impaired global grain production and contributed to food price spikes virtually every other year since 2007, highlighting the need to transform the way water is used and wasted throughout the entire food chain. This is one of the key messages being transmitted by FAO through its World Water Week programmes. FAO, through its Report 'The State of Land Water Resources for Food and Agriculture' has been warning that water scarcity and pollution are posing a growing risk to key food production systems around the world. The Report further states that agriculture, as we practice it today, is one of the causes of this phenomenon, as it represents 70% of all freshwater uses.

Towards addressing the issue, the FAO has proposed a new framework for water management in agriculture. The framework stresses, in particular, the importance of the following areas where policy and action should focus:

- a) Modernization of irrigation
- b) Better storage of rainwater at farm level
- c) Recycling and re-using
- d) Pollution control
- e) Substitution and reduction of food waste

At the same time, the reduction of post-harvest losses must be part of any water scarcity coping strategy. Of all the food produced globally, 30 percent the equivalent of 1.3 billion tons is lost or wasted every year along the value chain from field to fork. Reducing these losses go a long way towards reducing pressure on natural resources that are essential to food production, like soil and water.

Source: FAO

Wild Fruits: A Wealth of Haryana,

Haryana, predominantly an agrarian state of India, has diverse climatic conditions and produce a wide range of tropical and sub-tropical horticultural crops. The state is also a home of wild edible fruits, which are nutritionally and medicinally rich. These fruits have been used in dietary staple and medicine by local people from time immemorial. Incorporation of these species into the cropping/farming systems holds high potential. Important wild edible fruits dealt in this article are:

Jharber

Jharber (*Ziziphus nummularia* (Burm. f.) Wt. and Arn. belongs to the family Rhamnaceae. It is also known as *beri*, *kantan-ber*, *jhari*, *bordi* etc. It grows under the arid and semi-arid climatic conditions even on sand dunes, rocky, stony and shallow soils. The fruits are small in size and edible. The leaves contain appreciable amounts of nutrients and minerals and form the most valuable fodder for camel, goats and cattle fodder during November-December month. The bark of twigs and roots contain 12% tannin and is used for leather tanning. The bark is used as ointment for foul sores and scabies. Dried branches are used both as fencing material and fuel. It is gregarious, prickly, multi stemmed shrub having light brown bark with deep and extensive lateral root system. Leaves are short stalked ovate to orbicular, 12 -18 mm x 8-10mm in size and are tomentose above but densely wooly beneath. Flowers are cream coloured, hermaphrodite and appear in the axils of leaves in compact cymes. Fruit is a globose, ovoid oblong or obovate drupe of 3.5-9.5 mm size. The central stone usually contains two seeds. Jharber regenerates easily through the seeds coppices and root suckers. Flowers emerge during July-August and ripe fruits become ready for harvesting in November-December.



Fruiting bush of Jharber



Ker

Ker (*Capparis deciduas* (Forsk.) Edgew.) of the family Capparidaceae, is one of the prominent wild flora of the Haryana. It is also known as kharir, teet, dela and kareel. Plant has xerophytic characters such as deep taproots, scanty foliage, mucilaginous sap and tough conical spines. Ker is resistant to drought, heat, fire and frost. It is perennial woody shrub of the flat desert plains, dune fringes and undulating and sloppy ravenous areas. It can be grown in dry tropics and subtropics particularly the arid and semi arid regions. It can be grown on light sandy, alkaline and gravelly soils but not under waterlogging.

The green and immature acid fruits are used for making pickle. The immature fruits contain 8.6 and 5 percent crude and true proteins respectively, besides the minerals. Ripe fruits are useful in cardiac trouble and biliousness. The tender branches and leaves are used as a plaster for boils and swellings and to relieve toothache on chewing. The stem bark is used as a laxative, diaphoretic and anthelmintic. Immature flower buds, flowers and fruits are used as vegetable. It can be effectively used for sand dune stabilization. The plant is a much branched straggling and spinous shrub with grayish bark. The leaves are small (2x12mm), caducous and succulent and appear briefly on the tender shoots. Brick red flowers, 2.5cm in diameter, emerge in group of 2-8. The fruits are 0.7-1.5cm in diameter and have many seeds. Immature fruits are dark green and acid in taste. On ripening they turn scarlet red and become sweet in taste and are known as *pinju*. It can be propagated from the seeds or through root suckers. It flowers twice a year, i.e. In March-April and July-August, after the plants attain the age of 5 years.



Fruits of Ker



Lasora

Lasora or *gonda* or *lehusa* (*Cordia myxa* L.) belongs to the family Boraginaceae. It is found growing in arid and semi-arid regions or north India. It requires tropical to subtropical climatic conditions and can survive in saline and alkaline condition but sandy loam are considered to be the best. Unripe fruits are pickled or used as vegetable. Ripe fruits are eaten raw. The fruits are rich in minerals and the leaves are used for making *pattal* (trays) and as fodder. Its bark yields paper pulp and a fibre for making ropes and cordage. Lasora fruit has anthelmintic, diuretic, demulcent and expectorant properties. Leaves are applied to cure ulcers and headache. Decoction of bark is used in the treatment of fevers. Lasora is evergreen or partially deciduous tree of moderate size attaining a height of 12.2 and 15.2m. Flowers are small, white, usually pentamerous. Fruit is drupe, 1-3cm long, yellowish brown, pink or white. It can be propagated from the seeds. Flowering takes place in March April and green fruits become available during May-June.



Flowering in Losara



Leaves and fruits of Lasora

Pilu

Pilu, *bara jal* or toothbrush tree (*Salvadora aleoides* Decne) belongs to the family Salvadoraceae. Pilu can grow in tropical and subtropical climatic conditions but is sensitive to frost. It can tolerate salinity and is well adapted to extreme aridity and survives even in areas receiving less than 200mm rainfall. The fruit is sweet in taste and eaten fresh. Sweet pulp contains glucose, fructose and sucrose. Its stem is used as a medicinal tooth brush for dental care. The wood has marginal timber value. It is much branched evergreen shrub or tree with dense round crown growing up to 4-10m in height with twisted trunk drooping. Leaves are simple; the greenish white or greenish yellow flowers are borne in axillary or terminal lax paniculate spike. Fruits are globose, smooth drupe with red, yellow and purple in colour. Very little has been done to explore and exploit the genetic resource of these fruit crops. Hence, it is all the more essential, in the face of a severe genetic erosion and disappearance of these species as a result of activities related to urbanization and climate change, to protect the existing resource by all means.



Pilu Tree

Profuse fruiting in Pilu

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Department of Horticulture, CCS HAU, Hisar



ACTIVITIES

Symposiums/ Conferences held between July 2012 and December 2012

I. V International Symposium on Persimmon

The symposium was held at Wuhan, Hubei Province, China from 20 October to 26 October, 2012

II. I International Symposium on Jackfruit and other Moraceae

The symposium was held at Mymensingh, Bangladesh from 18 November to 20 November, 2012

III. IV International Symposium on Lychee, Longan and other Sapindaceae Fruits

The symposium was held at White River, South Africa from 2 December to 6 December, 2012

ACTIVITIES SCHEDULED FOR 2013

I. March 26-28, 2013, Chiang Mai, Thailand. IX International Symposium on Temperate Zone Fruits in the Tropics and Subtropics.

Info: Dr. Jirakorn Kosaisawe, Director General, Department of Agriculture, Chatuchak, Bangkok 10900, Thailand. Phone (66)25799636. Fax. (66)29405412,

Email: symposium: tzfts2013@yahoo.com

II. June 3-7, 2013, Dominican Republic, X International Mango Symposium.

Info: Juan Jose Espinal, Jose Amado Soler No. 50, Ensanche Paraiso, Santa Domingo, Dominican Republic. Phone 1809-5655603, Fax: 1809-5444727.

Email: jespinal@cedaf.org.do,

Email: symposium: xmango2013@gmail.com



Institute Focus

Empresa Brasileira de Pesquisa Agropecuária

(Brazilian Enterprise for Agricultural Research)

Embrapa Tropical Agroindustry

Embrapa Tropical Agroindustry originated at the National Research Centre for Cashew, created in 1987, to meet the demands of cashew agribusiness in Brazil. In 1993, the centre had its mission expanded to work with products and processes demanded by agribusiness, changing its name to National Research Centre for Tropical Agroindustry, with the synthesis signature 'Embrapa Tropical Agroindustry'.

It has the following Areas of Competence for international cooperation.

1. Processing of tropical fruits
2. Breeding of tropical fruit trees and ornamental plants
3. Micro and macro propagation of tropical fruit trees, ornamental plants and flowers
4. Improving the production system of tropical fruits, with emphasis on organic production and soil quality indicators
5. Plant protection: phytosanitary diagnosis and recommendations for the control of pests and diseases that affect the cashew tree and other species of agroindustrial interest
6. Quality control of agroindustrial products and processes
7. Improvement of agroindustrial processes
8. Training of technicians and producers in the production and processing of fruits and products of the tropical agroindustry
9. Postharvest of tropical fruit and flowers
10. Use of agroindustrial residues



New Books

Manual para el cultivo de frutales en el tropico (Manual for the culture of fruit trees in the tropics). Produmedios, Bogota (Colombia). Ed. Fischer, G. 2012. 1023p.

Information: gerencia@produmedios.org

Manual para la viticultura tropical (Manual for the tropical viticulture). Grupo Imprenta Y Publicaciones LIPTC, Tunja (Colombia). Eds. Almanza, P. J., P. A. Serrano and G. Fisher. 2012. 119p. Information: ppcalma@gmail.com

Harvesting the Sun: A Profile of World Horticulture. 2012. Scripta Horticulturae 14. A publication of the International Society for Horticultural Science. 72p. Available from ISHS Secretariat (www.ishs.org/pub/scripta.htm)

Advances in Irrigation Agronomy- Plantation Crops. 2012 by M. K. V. Carr. Cambridge University Press, Cambridge, UK. 360 p. (www.cambridge.org/carrl)

Fruit Tree Physiology. 2011. By W.S.Dhillon and Z.A.Bhat. Narendra Publishing House, 1417 Kishan Dutt Street, Delhi 110006, India, Email: info@nphindia.com

(www.nphindia.com)

Impact of Climate Change on Fruit Crops.2012. by W.S.Dhillon and P.S.Aulakh. Narendra Publishing House, 1417 Kishan Dutt Street, Delhi 110006, India, 415p.

Email: info@nphindia.com (www.nphindia.com)

Fruit Production in India.2013 by W.S.Dhillon Narendra Publishing House, 1417 Kishan Dutt Street, Delhi 110006, India, 680p.

Email: info@nphindia.com (www.nphindia.com)

Underutilized Fruit and Nuts.2009. by O.P.Parkkek and Suneel Sharma. Pointers Publishers, 807 Vyas Building, Chaura Rasta, Jaipur 302003.

Email: pointerpub@hotmail.com