

Seeds of tradition, seeds of future

Dr Debal Deb on behalf of Vrihi, New Delhi: Research Foundation for Science, Technology and Ecology, 2005

Vrihi, a consortium of farmers, scientists and environmentalists presents a range of agronomic and morphological characteristics and economic and cultural uses of 416 indigenous rice varieties from Eastern India. Introduction of the High Yielding Varieties (HYVs) in the 1960s, establishment of a market economy leading to the obliteration of the traditional practice of seed exchange and new laws like Plants Varieties Protection Act (2004), Patent Amendment Act (2004) and the Seed Bill (2004) have been instrumental in shaping Vrihi's response towards promoting indigenous crop genetic diversity.

A detailed account of the agronomic and morphological characteristics of the folk rice varieties collected from West Bengal, Jharkhand, Orissa, Assam and Tripura is given. The document also claims to be the largest database of local rice varieties published till date. All the 416 varieties were grown from 1998-2004 and assessed for the place of origin, land characteristics, number of days until flowering, date of 50% flowering, flowering duration, crop duration, resistance to pests and pathogens, grain quality, aroma and end use. In addition to this, morphological characteristics like plant height, seedling height, culm strength, leaf angle and width, panicle length and weight, grain length, yield potential etc were also taken into account.

An interesting account of the folk rice varieties has been presented towards the end. It was found that a few lowland varieties can grow up to 18 feet above water in seasonal wetlands. Folk rice varieties have long straws are preferred by poor farmers over high yielding varieties for thatching and as cattle fodder. West Bengal has 42 scented indigenous rice varieties that are preferred by farmers for culinary purposes. A few rice varieties like Bhoot moori, Parmai-sal, and Kabiraj-sal were found to have medicinal properties. When yield was calculated as production of grains per unit of inputs (of water and agrochemicals), most local varieties were found to outperform the HYVs. Yield stability was observed to be an important characteristic of the folk rice varieties which showed low yield fluctuations as opposed to the HYVs.

Vrihi also has in its collection a double-seeded rice variety called Jugal. Discovered from a marginal land in Birbhum, this variety has been growing on Vrihi's farms since 1999. Another interesting variety available with Vrihi is the three-seeded Sateen rice collected from South 24 Paraganas. It was observed that the frequency of spikelets with double-grain seeds is about 41.4% while that of the three-grain seeds is 1% or less. At the same time, the properties of many rice varieties are discovered accidentally. The yield potential of Bakul phool was realized when a farmer-volunteer grew it in his farm in Bankura with appropriate supply of organic nutrients and crop spacing. Similarly, a variety of Dudhesawar that is said to have survived in a few submerged farms in the 2000 floods was incidentally discovered in Howrah. A series of on-farm experiments coupled with the crop response to some natural disaster will help assess the agronomic characteristics of the variety better.

The book also presents an insight into the on-site experimentation by farmers leading to the conservation of the folk varieties. Farmers in the Puruliya district, for example, grow the long awned Kaya rice not only to produce food from their dryland farms, but also to ensure its conservation. Many farmers in Jharkhand and West Bengal prefer to grow some rice varieties with erect flag leaf because graminivore birds cannot perch on them. Various cultural rituals and gustatory and aesthetic preferences help conserve a number of useful species. Wild relatives of Uridhan and Bunodhan are associated with religious rites in West Bengal and Kanakchur rice is extensively used in making the aromatic sweet moa in Jaynagar area in South 24 Paraganas district. Lately, there has been a growing understanding

of this human ecological angle to the indigenous crop breeding. Despite the progress in the plant genomics today, the importance of the long term on-farm experiments and results in determining the effect of environment on the morphological characteristics of rice varieties can not be neglected.

Irrigation in Ancient and Medieval India

Dr R P Kulkarni, Director, Directorate of Archaeology and Museums, Maharashtra State, Mumbai-400 001, Research Monograph Series-3 Pages 266

Patterns and methods of irrigation have changed and evolved over thousands of years and the study of this antiquity provides an interesting read. The book consists of eighteen chapters describing various irrigation methodologies practiced in India in ancient and medieval times, case histories of dams, traditional ways of fixing the boundaries, water cess, land taxes etc.

The book provides modest details about other associated aspects like rewards to engineers engaged in constructing dams, its construction and purposes, sale and purchase, construction of tanks by individuals, maintenance etc. The topics of land reclamation, dispute settlement, water laws and religious activities accompanying the construction of a tank are also touched upon.

The book is based on data which has been predominantly gathered, compiled and analysed after in-depth study of the various epigraphic records. It succeeds in invoking the interest of an average reader as well as students, researchers and academicians in the field. 