

A Treasure of Crop Diversity from Outstanding Farmer-Breeder, JP Singh (India)

By Jaiprakash Singh, Bharat Mansata, Jacob Nellithanam and Deepika Kundaji *

Introduction

Jaiprakash Singh (*aka* JP) is an outstanding **organic** farmer breeder of several important and widely cultivated crops like rice, wheat, pigeon pea and mustard. He started this work more than 2 decades ago, and presently has 480 varieties of rice, 120 varieties of wheat, 40 varieties of pigeon pea, 3 varieties of mustard; also some chillies and tomatoes. These varieties are 'developed' or evolved over many crop cycles through a process of multi-generational selection for distinct features and qualities, including grain yield, pest resistance, special nutritive values, flavour, fragrance, grain size, shape, colour, etc. The varieties bred by JP are particularly useful for many farmers still following or reverting to indigenous organic system in India.

JP's 5 acre farm is located near Varanasi in the north Indian state of Uttar Pradesh. Several of his crop varieties are becoming popular among many farmers in the northern and central belts of India.

The importance of JP's work

The wide genetic variability contained in the diverse crop varieties bred by JP Singh is an immensely rich treasure for safeguarding the sustainability of agriculture, and the well-being of farmers and future generations. This has now become critically important in our times of disappearing crop diversity and extensive agro-ecological and climatic turmoil, caused by short-sighted industrial interventions and monocultural cultivation on a mega-scale. Crop qualities that have become particularly important today are tolerance to drought, flood, heat, cold, salinity; as well as qualities like pest resistance, nutritive/medicinal value, grain/biomass yield efficiency, etc.

Some outstanding/popular varieties bred by JP

These include:

WHEAT

- 1) JP 151 – has more iron content (12% more than normal)
- 2) JP 52 – is iron rich and has big grains
- 3) JP 168 – is very high yielding (upto 8 tonnes per ha)
- 4) JP 8661 – a heavy tillering variety

RICE

- 1) JP 73 is a high yielding variety of 125 to 130 days duration, and average yield of 6 to 6.5 tonnes per ha, while the maximum yield is 8.5 tonnes per ha.
- 2) JP 72 is a fine scented rice of 110 days duration, yielding 6 tonnes per ha.

PIGEON PEA

- 1) JP 9
- 2) JP 16

3) JP 14

All of the above 3 varieties are resistant to pod borer, and yield 1.4 to 1.5 tonnes per acre. Presently, they are undergoing government trials.

4) JP 07 was his first pigeon pea selection. It is also borer resistant and yields 5 to 6 seeds per pod as against 3 to 4 seeds per pod with normal varieties.

MUSTARD

1) JP-01 is a yellow seeded variety

2) JP Vishwajeet has a clustered pod formation. This variety is very successful in Rajasthan (north-western India), and thrives in colder winters.

Some General Observations

JP's basic method of developing varieties is selection from variations observed in the field. For example, from an old wheat variety, SHARBATI, and from a popular tall rice variety, MANSURI, he identified single plants from which he developed stable varieties.

Several of JP's varieties are increasingly in demand because they meet certain felt needs /preferences of farmers, and also because of recognition and awards given by civil society organisations and government institutions. JP has participated in Seed Festivals in Kolkata, Hyderabad, Patna, Bangalore, and numerous other agriculture related functions, events and gatherings all over India. In recent years, there have also been several encouraging media reports acclaiming his work.

JP's crop varieties have been tried out and found to be very successful in farmers' fields in several north and central Indian states of Haryana, Punjab, UP, MP, Bihar. Maharashtra and Chattisgarh.

The seed multiplication of selected crop varieties is carried out by a number of farmers identified by JP in 9 neighbouring villages. They grow and sell back the multiplied seeds to JP.

All of JP's plant breeding work is self-supported financially, supplemented by very small contributions from individuals. At present, the sale of seed is JP's main livelihood source. He sells 300 to 500 quintals of rice and wheat seeds every year.

JP practises organic farming, using green manure like sunnhemp (*Crotalaria juncea*) and *Dhaincha* (*Sesbania aculeata*) once every 2 to 3 years. The young green manure plants are cut back and spread on the field. Fresh cow dung of 500 kg/ha is sprinkled over the green manure. The field is flooded for 10 days, during which time the organic matter is completely transformed and the field is ready for transplanting. JP also uses on-farm organic preparations like 'Jeevamrut', essentially a formulation containing fresh cow dung, cow urine, a little bit of molasses/jaggery, diluted with water, and stirred daily for aeration.

Incidentally, 'Jaiprakash' (in Hindi) means — the victory of light over darkness!

*About the authors

Jay Prakash Singh is an exemplary Farmer –Breeder from Uttar Pradesh, India

Bharat Mansata is a writer and environmental conservation activist based in Mumbai and Kolkata, India

Jacob Nellithanam is a conserver of traditional rice varieties and a farmers' rights activist based in Chattisgarh, India.

Deepika Kundaji is a vegetable seed conserver based in Auroville, TN, India