

Scientific cane cultivation

gave fame and name: A tale of a cane Entrepreneur

SUGARCANE as leading cash crop led India a second largest producer of sugar (17.1%) in the world after Brazil. Within India, Uttar Pradesh (36.1%), Maharashtra (34.3%) and Karnataka (11.7%) are the three largest cane producers. Although, area under cane has decreased, viz. 50.66, 49.27 and

43.89 lakhs ha during 2014-15, 2015-16, and 2016-17, respectively, but the production and yield were in increasing order (362.33 348.45 306.72 million tonnes sugarcane production and yield 71512, 70720 and 69886 kg/ha) during the same period. Further, the sugar production has also increased to 32.25 million

tonnes in 2017-18 in comparison to the 24.8 million tonnes produced in 2015-16 attributed by the availability and accessibility of farmers to superior seeds of cane, modern cultivation practices and other essential inputs.

The entrepreneurial behavior of youth towards cane farming is also a



Cane field of Shri Jabar Pal Singh



Farm implements and technologies used by Shri Jabar Pal Singh in cane cultivation

major factor in increasing the cane production and has been proved by a sugarcane entrepreneur Shri Jabarpal Singh whose continuous learning from *Krishi Vigyan Kendra-IVRI*, Izanagar brought about the remarkable changes in sugarcane cultivation in Bareilly district, Uttar Pradesh. The area under cane is increasing continuously, in Bareilly district, for the last five years, viz. 78,570 ha, 78,646 ha, 93,637 ha and 111,562 ha during 2015-16, 2016-17 and 2017-18 and 2018-19, respectively. Further, the area under cane by trench method and average cane yield of Bareilly district are 12,195 ha and 800.92 quintal/ha, respectively, during 2018-19.

Shri Jabarpal Singh is 43 year old, Bachelor of Commerce, hails from Karanpur village, Meeraganj block of Bareilly district, Uttar Pradesh. He had demonstrated the potential of trench method in cane crop and produced the record breaking yield of cane, which has earned him a social recognition and a well known cane agripreneur of the district.

The team of scientists of IVRI, Izatnagar tried to explore the success mantra of this outstanding cane farmer. Shri Jabar Pal Singh started cane cultivation on 10 *bigha* farmland by practicing the traditional method during 1992-93. After almost more than two decades, he adopted trench method, in consultation with *Krishi Vigyan Kendra-IVRI* and the field functionaries of Sugar Mill. The increased income from higher production in cane cultivation by following trench method and now he is the owner of 180 *bigha* of agricultural land. Tractor, razor/furrow opener, trench opener for plantation of sugarcane, bund maker, leveler, 5 blade-soil turning plough, harrow 16 plates, cultivator 11 tines, 4 pumping set, drip irrigation system are the main farm implements, he owns. Some implements he had purchased from the markets while few are designed by him for saving manpower and higher production, which has resulted into higher income from cane cultivation.

He is cultivating various improved varieties of sugarcane (Co 0238, Co 0239, Co 0118, CoS 08279, CoS

08272, CoH 128, CoH 160, CoH 167, CoSI 3102, CoJ 88, Co 98014) in his 28 acre land, out of which about 8 acre land is used specifically for the production of sugarcane-seed (2,500-3,000 q/year) which he sold @ ₹ 350/q and in 14 acres he is cultivating sugarcane, commercially and all these varieties developed by the National Agricultural Research System. The farmers of Uttar Pradesh, Uttrakhand, Haryana, Punjab purchase the sugarcane seed from his farm. He is practicing intercrop, viz. mustard, summer groundnut, vegetable pea, cauliflower, tomato, potato etc with sugarcane to increase income by utilizing and conservation of resources. The average yield of cane at his farm is 1,750 to 2,000 q/ha whereas the highest yield of cane was 2,285 q/ha on his farm.

Initially, he used trench opener provided by Meeraganj Sugar Mill in which trenches were at a fix distance of 4 feet (120 cm). After that he himself developed the prototype of trench opener with leveling attachment which can level the space between two trenches which saved about 20-25 labour/ha in preparation of seed bed for intercropping. He, further modified it with adjustable spacing (trench to trench spacing can be adjusted from 120 to 180 cm) and leveling attachment. The waste decomposer and drip irrigation are being practice by him in cane cultivation. He has also developed E-literature on sugarcane cultivation, which he shares, through WhatsApp, with other farmers to educate and motivate them to follow good sugarcane cultivation practices to increase their income from cane.

Status of field crops cultivation

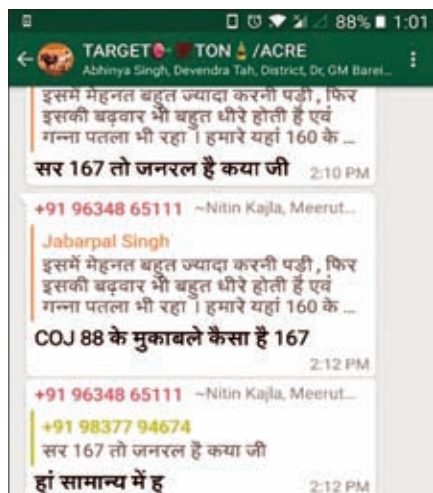
Crop	Cost of cultivation (₹/ha)	Gross income (₹/ha)	Net income (₹/ha)	CB Ratio
Paddy	43,750	81,174	37,424	1:1.85
Wheat	40,500	69,189	28,689	1:1.71
Sugarcane + Mustard	1,35,000	6,75,000	5,40,000	1:5.00
Sugarcane + Cauliflower	1,45,000	7,89,665	6,44,665	1:5.45
Sugarcane + Potato	1,48,000	7,12,700	5,64,700	1:4.82
Sugarcane + Veg. Pea	1,45,000	7,80,500	6,35,500	1:5.38
Sugarcane + Tomato	1,45,000	7,28,500	5,83,500	1:5.02
Sugarcane + Summer Groundnut	1,42,000	6,98,750	5,56,750	1:4.92
Fodder Crops : Berseem and Multicut Sorghum	21,500	35,168	13,668	1:1.63

Status of horticultural crops cultivation

Crop	Area/Nos.	Variety/Breed
Potato, Tomato, Veg. Pea as intercrop in Sugarcane		
Nutrition garden	0.2 ha	Methi, Kasoori Methi, Kassa, Dhania (NSC-201-B), Potato, Tomato, Brinjal, Palak, Garlic, Papaya, Lemon, Sarson for saag, Beans, Chilly, Reddish, Turnip, Carrot, Cabbage, Cauliflower etc.
Mango	10 Nos.	Alfanzo, Dashahri, Langra
Sapota (Cheeku)	2 Nos.	Cricket Ball
Peach	4 Nos.	Sharbati, Saharanpur Prabhat
Ber	2 Nos.	Dileep Ber
Litchi	2 Nos.	Rose Scented
Guava	4 Nos.	Black Guava, Allahabad Safeda
Banana	12 Nos.	G-9

Status of agroforestry

Crop	Area/Nos.	Variety/Breed
Bamboo plantation as agroforestry	0.2 ha	Munger bamboo
Poplar plantation as agroforestry	0.2 ha	Kranti/ local variety



WhatsApp group of Shri Jabar Pal Singh

The information about agriculture and allied activities of his farm is given below.

Using social media for promotion of cane cultivation: He is actively involved in the dissemination of scientific information about sugarcane



A video film of Shri Jabar Pal Singh on YouTube Channel of KVK-IVRI

cultivation among the farmers, many times he goes to the farmer's field and get done the sugarcane cultivation in his presence to advise them technically. He keeps himself update and also shares the useful information with other fellow farmers, through the mobile phone, personal visit and through social media i.e. WhatsApp group, facebook page etc.



Facebook page of Shri Jabar Pal Singh

He has formed two WhatsApp groups one in English (Target 100 tonnes per acre) and another in Hindi (Lakshya 100 tonnes prati acre) which have about 500 members comprising the farmers, scientists and officials of line departments. The members of these WhatsApp groups continuously give advisories, share and discuss the experiences of trench plantation of sugarcane, latest technologies of cane cultivation,



E-literature developed by Shri Jabar Pal Singh



Visitors at Shri Jabar Pal Singh cane farm



Shri Jabar Pal Singh honored at several occasions for his contribution in promotion of trend method in cane cultivation

invite suggestions and give advisories. Shri Jabarpal Singh is also an active member of WhatsApp group of *Krishi Vigyan Kendra- IVRI*, Bareilly and share useful information for the betterment of the farmers. He has 741 followers on his facebook page. Further, a video film depicting his success story is also available on YouTube Channel of KVK IVRI (https://www.youtube.com/watch?v=zplkR38I_WE&t=30s) which has been viewed by 1253 viewers. His achievements in sugarcane cultivation has also been reflected in media (electronic, paper media, All India Radio and Doordarshan, E TV etc). His

recognition can be seen on Google. His achievements are depicted on his facebook page (<https://www.facebook.com/jabarpal.singh>) also .

Development of E-literature: Shri Jabarpal Singh has developed E-literature on sugarcane cultivation and on cattle rearing based on his experiences and innovativeness in agriculture and dairy farming. The E-literature is available in form of PDF which are shared regularly among the farmers and also in WhatsApp group.

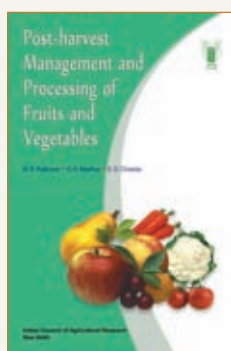
Visitors at his farm: Approximately, 13,000-14,000 visitors (farmers, scientists, research scholars, agripreneur, officers of line

department of Uttar Pradesh, Uttrakhand, Haryana and Punjab) come to his farm every year to learn the scientific approach being followed by him in cane cultivation.

Awards and recognition: He has been awarded with several national and State Level awards.

He was also a member of the farmers' delegation called by the Hon'ble Prime Minister of India to discuss the farmers' problem and the ways to double the farmers' income. He too delivers a technical lecture to the farmers to motivate them to follow Good Agricultural Practices for higher production and earn more by cane cultivation.

Post-harvest Management and Processing of Fruits and Vegetables



Post-harvest management technology offers promising option for increasing production of vegetables and fruits quantity-wise and also in maintaining quality of the products. It involves all the activities that occur after production or harvesting of commodities, including procurement, removal of field heat, sorting, grading, packaging, storage, transportation, primary and secondary processing and marketing of agricultural products from farm-gate to distributors. This book is an effort to document vast available knowledge on the various aspects of post-harvest management and processing, and it will prove worthy for teachers, students and extension workers for understanding post-harvest management and processing of fruits and vegetables. It has 16 chapters covering storage, packaging, advanced preservation technology and value-addition of fruits and vegetables.

TECHNICAL SPECIFICATIONS

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