

Profitable agricultural business idea:

A successful case of vinegar man

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The majority of farmers in India are small holders and their economic condition is non-sustainable. Transformation of non-profitable farming to profitable agribusiness avenue is the most essential step to combat the challenge of food insecurity and poverty. Thus, a lot of intervention and technological backstopping are needed to ensure a sustainable livelihood for smallholders. A small sugarcane growing farmer, Satender Rana from Ladpur village, Muzaffarnagar, Uttar Pradesh came into contact with Agri-Business Incubation (ABI) Centre, ICAR-IIFSR, Modipuram, Uttar Pradesh with a target to learn new techniques for raising his family income. ABI Centre provided hands-on training experiences in vinegar production from sugarcane as a subsidiary occupation in order to raise his family income. Mr Rana's keen interest in diversifying the product range in natural vinegar production transformed his identity into the vinegar man of Ladpur and nearby region. Now, he is able to get net profit up to ₹8,50,800 per annum which is 3.9 times higher than his earlier income and is now acting as a role model for other sugarcane based farmers.

Keywords: Agri-Business, High value crops, Incubation, Sugarcane, Vinegar production

THE farmers of western plains of Uttar Pradesh are having small land holdings (average land holding is 0.80 ha which is less than national average operational land holding size) and mainly depend upon the crops, viz. sugarcane, wheat along with few dairy animals for their livelihood. Farmer's economic condition is under distress due to lack of awareness, knowledge and skills on other Agri-enterprises. Transformation of non-profitable farming to profitable agribusiness avenues is the most essential step to combat the challenge of food insecurity and poverty. Thus, a lot of technological interventions and capacity building programmes are needed to ensure a sustainable livelihood of farmers, mainly smallholders. In India, government is encouraging to raise the income of small farmer's through different mission, schemes and programmes such as Start-ups India, Skill India, Kisan Sampada Yojna and has also

established Agri Business Centres for making Atmanirbhar Bharat.

Agri-Business Incubation Centre, ICAR-Indian Institute of Farming Systems Research (IIFSR), Modipuram, Meerut, Uttar Pradesh was established during 2019 under the aegis of National Agriculture Innovation Fund (NAIF) scheme of ICAR, New Delhi. It was established with an objective of facilitating incubation of new start-ups/entrepreneurs and enterprises for innovative technologies by providing need based physical, technical, business and networking support, facilities and services to test and validate venture before successful establishment of enterprises. It also provides technological support to the start-ups during incubation and afterwards aids in further upgradation and expansion of business. Moreover, the centre is conducting other different activities such as organizing meetings, entrepreneurship development

training and brainstorming session with potential stakeholders for initiating business in ICAR-IIFSR technologies. ICAR-IIFSR has well developed laboratories and infrastructure for conducting hands-on training on Integrated Farming Systems models, organic farming, natural farming, year-round mushroom production, value addition and other agriculture-based technologies. Entrepreneurs can come with their ideas to develop prototype and product on laboratory scale. Further product can be refined based on feedback from concerned stakeholders. Farmer's empowerment through agri-business incubation centre creates a huge opportunity for the farmers/youth entrepreneurs for enhancing income, employment, self-confidence *vis a vis* enhancing the production, shelf-life of the agro, horticultural produce, value addition, reducing wastage leading to overall development of the nation.

Background of a small scale business aspirant

Mr. Santendar Rana, a small landholder of Ladpur village, Muzaffarnagar, Uttar Pradesh came into contact with Agri-business incubation programme of ICAR-IIFSR, Modipuram, Meerut, Uttar Pradesh with a hope of raising his family income. A 58 years old, Mr Rana having a family of six members including 4 adults and 2 children; owner of 1.2 ha of land was practicing sugarcane-wheat + dairy farming. He had been engaged in sugarcane production from around 1.2 ha of land and wheat from 0.26 ha of land for home consumption. He was also producing fodder for his animals (one crossbreed cow and one non-descript) from 0.12 ha of land. He used to earn ₹1,30,000 only from sugarcane cultivation, an average production (820 q/h) due to very high cost of cultivation including fertilizers, pest and disease management, labour costs, and high cost of machineries (taken on rent). Besides that, he used to get 2.5 q of wheat from 0.26 ha of land and 6 litres/day milk from both the cows that was utilized for home consumption in the form of milk, ghee, butter and curd. Mr Rana faced financial problems and mental stress due to unprofitable farming (higher cost of cultivation, untimely payments by sugarcane mills). Mr. Rana attended one of the farmer-scientist interaction meeting during March 2019 and showed keen interest to improve his family income from 1.2 ha land as his income was only ₹1.73 lakhs/annum.

Institutional support, establishment of vinegar processing unit and revenue generation

Analysing the farming situation and constraints of Mr Rana, our expert suggested him to start scientific vinegar production from sugarcane so that he would be able to raise his family income. Accordingly, he registered in our ABI Centre as an Incubate to learn scientific method of vinegar production. Initially he learnt the technology of natural vinegar production from sugarcane whose juice is a good choice for

natural vinegar because of its high sugar content and availability. In sugar producing areas where leftover canes rejected by mills are available, it is recommended to utilize the leftovers and produce a product such as vinegar.

Natural vinegar is a superior food additive over synthetic vinegar as it carries essential amino acids from its fruit source and is reported to act as a medicine for aches and gastric troubles, hence, it can be an excellent source of income. However, requirement of long fermentation periods (45 days in summers to 120 days in winters) is the only constraint that was observed for natural vinegar production over synthetic vinegar.

Mr. Rana established a small setup of pre-processing and processing machines including crusher, juicers, bottling and sealing machine, and storage vessels. Afterwards, he started vinegar production from sugarcane utilizing only 0.13 ha of sugarcane having an yield of 140 q. Around 2000 litres of vinegar has been produced from 140 q of sugarcane. Mr Rana used to get around ₹40,000 from selling 140 qa of sugarcane and now he is getting ₹2,40,000 from selling the vinegar which is around 6 times higher than selling the sugarcane crop as such to processing industry/local crushers. Total cost of production reported in terms of vinegar production from sugarcane was ₹93,000 (labour, processing, bottling/packaging cost) whereas net profit margins from the sugarcane vinegar was ₹1,47,000.

Continuation of hand holding, diversification of product range, business expansion

Due to lack of round the year availability of sugarcane as well as for diversifying products range, Mr Rana started introduction of new crops and received another 6 months certification training related to knowledge and hands-on experience on high value horticultural crops production, natural vinegar production from high value crops, bottling, food safety and quality control, FSSAI licensing, packaging, branding and

e-marketing under ABI scheme of ICAR-IIFSR. Mr Rana sold his milch animals for maintaining the hygienic conditions during vinegar production as it was a pre-requisite condition for FSSAI licensing. He maintained all the quality control measures during pre-processing, processing, bottling and packaging.

After receiving the vast training experience, he moved ahead in this field and took more initiative in vinegar production from different horticultural crops, viz. apple, pineapple, black plum (jamun), dates, grapes etc. Apple vinegar helps to reduce the LDL, triglyceride, and cholesterol levels in patients with hyperlipidemia. Jamun is considered to be medicinally valuable for stomach, spleen and diabetic ailments. Mr Rana used to purchase these fruits from local markets. He produces around 600 litres of pineapple vinegar, 2000 litres apple vinegar, 1500 litres black plum vinegar and 200 litres of dates and grape vinegar and sold @ ₹200/litre each for pineapple and apple, ₹120/litres for black plum and ₹100/litre for dates and grapes each. He received the total gross income of ₹7,40,000.00 whereas the total cost of production was ₹2,40,000 (cost of raw material, labour, processing, bottling/packaging) and net profit margins from fruit vinegar was ₹5,00,000. Mr Rana again expanded his business and started the vinegar production from the crops having nutraceutical properties. He opted vinegar production from carom seeds that are valued as gastrointestinal medicine and as an antiseptic, and traditionally being used in various bowel disorders, such as indigestion, flatulence, colic and diarrhea. He also opted vinegar production from olives due to its anti-inflammatory and anti-oxidant properties which are linked to inferior risk of cardiovascular, diabetes, hypertension and cancer diseases. Mr Rana prepared 25 litres of vinegar/kg of carom seeds. He prepared a total of 500 litres vinegar from 20 kg of carom seeds and earned a total gross income of ₹60,000 by selling @ ₹120/litres. The total cost of production for carom

seeds vinegar was ₹35,000 (cost of raw material, labour, processing, bottling/packaging cost) whereas net profit margins from carom seed vinegar was ₹25,000. Similarly, Mr Rana purchased 50 kg of olives ₹400/kg. Around 10 litres of vinegar was prepared per kilogram of olives. A total of 500 litres of olive vinegar was prepared from 50 kg olives. The selling price of olive vinegar was ₹220/litres and he earned a total gross income of ₹1,10,000 by selling the vinegar. The total cost of production for olive vinegar was ₹40,000 (cost of raw material, labour, processing, bottling/packaging cost). Thereby, Mr Rana earned a total net income of ₹4,82,000 by vinegar production from sugarcane, horticultural crops, carom seeds and olives. Apart from that, Mr Rana has also taken initiative in diversifying his traditional production system to a more diversified high value crop production system. He converted around 0.40 ha sugarcane into avocado cultivation. He planted around 80 avocado saplings in 0.40 ha of land with 75 feet line to line distance. In between this distance he cultivated wheat and mustard

Table 1. Income from 1.2 ha land after attached with ICAR-IIFSR, ABI centre as incubatee

Component		Status of income as ABI incubatee			
	Crop	Area (ha)/ No.	Production (q/litre/No.)	Gross income (₹)	Net income (₹)
Field Crop 1	Wheat	0.26	09	16200	12800
Field Crop 2	Sugarcane	0.67	552.75q	1,79,643	96,000
Vinegar production					
	(On farm)	Sugarcane	0.13	2000 litres	2,40,000
	Vinegar production (purchase from outside)	Pineapple, apple, dates, black plum, grapes, carom seeds, olives	5,500 litres	9,10,000	5,95,000
Horticulture + Field crop (intercropping)	Avocado and (wheat + mustard) as intercrop	0.4	New initiative	-	-
Total				13,45,843	8,50,800

as intercropping for fulfilling the family requirement for food grain as well as oilseed.

Branding and marketing

Mr Rana used to sell his products online and has now become a life member of amazon (an online marketing option). He is also having

GST No and FSSAI licensing. He sells his products offline to Haridwar, Uttarakhand, Delhi, Varanasi and Uttar Pradesh, and in local market, viz. Muradpur, Mawana, Baghpat, Bhadot, Budhana, Khatauli, Shahpur Ghaziabad. The family income of Mr Rana has increased up to ₹8,50,800/annum around



Production of vinegar in Mr Rana's processing unit



Quality control maintenance



Showcasing of products in exhibition



A View of Satender Rana's Field

3.9 times of earlier due to his sincere efforts, keen interest and commitment towards increasing his family income (Table 1). He has established a small company in the name of ANANT GOLD SIRK. Mr Rana is an innovative ABI incubatee, a successful agripreneur and a role model for other farmers.

SUMMARY

India is suffering from lower yields due to climate change, fragmented landholdings, leading

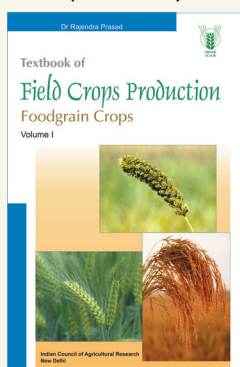
to poverty and undernourishment in rural areas. However, in urban areas obesity and lifestyle disorders are also a serious issue of concern. Development of agribusiness models through processing, nutritional and medicinal value additions under brand name will be helpful in enhancement of farmer's income as compared to traditional farming practices. Creation of value through technological interventions in the area of innovative product development, will help in

enhancement of revenue to the farmer. The adoption of these types of business models will also help in access of healthier food products to the vulnerable target consumers apart from providing sustainable food, nutrition and income security to small land holders.

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Textbook of Field Crops Production – Foodgrain Crops

(Volume I)



The first edition of Textbook of Field Crops Production was published in 2002 and there has been a heavy demand for the book. This book is now being brought out in two volumes. The chapters cover emerging trends in crop production such as System of Rice Intensification (SRI), export quality assurance in the production technology of commodities like Basmati rice, organic farming, resource conservation technologies, herbicide management etc. Good agronomic practices must judiciously inter-mix the applications of soil and plant sciences to produce food, feed, fuel, fibre, and of late nutraceuticals while ensuring sustainability of the system in as much possible environment and eco-friendly manner. The advent of hydroponics, precision farming, bio-sensors, fertigation, landscaping, application of ICT, GPS and GIS tools, micro-irrigation etc. is in the horizon. The textbook covers both the fundamentals of the subject and at the same time inspire and prepare both teachers and students for the emerging frontiers.

TECHNICAL SPECIFICATIONS

No. of pages : i-xii + 396 • Price : ₹ 700 • ISBN No. : 978-81-7164-116-1

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(Volume II)

