Success Story

FLORICULTURE: A COLOURFUL STEP OF INCOME GENERATION

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ABSTRACT
Intensive mono-cropping system has also resulted in the critical deterioration of our natural resources. Thus, the diversification in agriculture in terms of cultivation of pulses, oilseeds, flowers, vegetables etc., along with their post harvest handling and processing has become the need of the hour. Sh Gurpreet Singh Shergill is a progressive farmer. Out of the total 36 acres of land, he grows horticultural crops on 22 acres of land, along with 12 acres under field crops, half acre under agro-forestry and vermiculture. He is growing gladiolus, rose, marigold, gulzafri in open field (7.8 ha) and rose in protected cultivation. He is also having fish pond of 4000 m^2 with 18000 fishes. He has 10 improved cattle (Holstein Friesian). He has well established low cost vermicomposting unit. He also conserved natural resources by making judicious use of fertilizers on the basis of soil testing, adopting sprinkler irrigation and mulching for weed control in rose etc. He also processes surplus rose flowers into rose water under the brand name of 'Balson'. He has developed a gladiolus corm digger, a rotary sieve corm washer and a gladiolus corm grader.

INTRODUCTION

It is increasingly clear that climate change is the dominant global scale environmental concern that will have a profound influence on the agro-ecological conditions, under which farmers and rural populations need to develop their livelihood strategies, manage their natural resources and achieve food security and other ends. Enhancing food security requires agricultural production systems to change in the direction of higher productivity and also, essentially, lower output variability in the face of climate risk and risks of an agro-ecological and socio-economic nature. More productive and resilient agriculture requires transformations in the management of natural resources (e.g., land, water, soil nutrients, and genetic resources) and higher efficiency in the use of these resources and inputs for production.

Punjab has played a leading role in ushering in the era of "Green Revolution" in the country. The predominant rice-wheat cropping system covering about 35.1 lakh ha area in Punjab, has undoubtedly provided good returns to the farmers and has contributed greatly towards the food security of the country. But this intensive mono-cropping system has also resulted in the critical deterioration of our natural resources. Thus, the diversification in agriculture in terms of cultivation of pulses, oilseeds, flowers, vegetables etc., along with their post harvest handling and processing has become the need of the hour.

INSTITUTIONAL INVOLVEMENT

From the beginning of his tryst with conventional rice-wheat farming system, it was his strong desire to adopt an integrated & diversified approach. This desire brought Mr. Shergill to Krishi Vigyan Kendra (KVK), Patiala for attending a training on dairy farming, during the year 1995. This training not only enabled him to start his own dairy unit, but also gave him an opportunity to interact with the scientists from Punjab Agricultural University (PAU) and KVK, Patiala. On basis of these interactions and his strong fascination towards flowers, he decided to make floriculture as his base in diversified farming. Beginning with marigold cultivation in 1996, today he has come a long way with gladiolus, gulzafri, rose, marigold etc.

It is the result of the innovativeness and sheer hardwork of Mr. Shergill along with the regular guidance &

encouragement from scientists of PAU and KVK, Patiala, that out of the total 36 acres of land, he grows horticultural crops on 22 acres of land, along with 12 acres under field crops, half acre under agro-forestry & vermiculture and one acre of fish pond. His farm also includes polyhouses for protected cultivation of rose, a cold room for storage of fresh flowers, a pack house for packing of rose cut-flowers & gladiolus sticks, a rose water plant, a dairy unit and sheds for the cleaning, grading & storage of gladiolus bulbs and storage of fertilizers, pesticides & implements.

Mr. Gurpreet regularly attends the short durations & vocational trainings conducted by KVK, Patiala and adopts the latest technologies on his farm. He also visits other farmers & cultivators of repute to gain from their experiences. He has adopted a number of innovative techniques for the judicious use of inputs, which have resulted in a decrease in cost of cultivation and improvement in his net returns. For instance, Mr. Gurpreet has adopted foliar spray of fertilizers on horticultural crops for better results & lower costs, regular soil & water testing, water management through drip irrigation, underground irrigation channels, a water storage tank and mulching of rose crop with paddy straw. The water storage tank is being used for fertigation and irrigation of high value crops, as well as for fishery. During slump in the marketing of rose, he produces rose water from the loose flowers in his rose water plant. He has also established a vermi-composting unit on 2000 sq. feet, which produces 700-800 quintals of vermi-compost per year. He uses this vermicompost for personal use as well as for sale in local market. He has his own compost unit and recharge well and he recycles all the agricultural waste, thus conserving the natural resources and practicing sustainable agriculture.

SPECIAL INNOVATION(S)

Self designed -powered gladiolus bulb cleaner-cum-grader

Mr. Gurpreet S. Shergill has also applied his engineering acumen & technical knowledge for the innovation of some new agricultural implements and betterment of the existing ones according to his needs. For example, in case of gladiolus crop, choosing the right size of bulb is very important for the quality of the crop. But manual grading of bulbs is too laborious and time consuming, and mechanical graders are not readily available. So, he has designed and developed a self-powered gladiolus bulb cleaner-cum-grader, which grades the bulbs in four different sizes in a single operation with zero percent loss. It can grade 7-8 quintals of gladiolus bulbs in one hour. Similarly, he has modified a groundnut digger to develop a gladiolus bulb digger operated by a tractor to harvest bulbs. This digger makes the process faster, easier & less laborious.

Table 1. Activity wise, gross & net income and cost-benefit ratio of different crops/ enterprises

Name of the crop	Area (ha)	Gross Income	Expenditure	Net Income	BC ratio
(i) FIELD CROPS					
Paddy	4	350000	90000	260000	3.89
Wheat	4	250000	75000	1,75,000	3.33
Green Fodder	2.4	60000	10000	50000	6.00
(ii) HORTICULTURE CROPS					
Gladiolus-English	2	625000	95000	530000	6.58
Gladiolus	2	500000	85000	415000	5.88
Gladiolus Cormels	1.6	450000	75000	375000	6.00
Rose	1.2	480000	120000	360000	4.00
(iii) LIVESTOCK					
Dairy – 10 Cows		970000	620000	350000	1.56
(iv) FISHERIES					
	0.4	185000	45000	140000	4.11
(v) ANY OTHER					
Vermi compost	2000 ft^2	200000	40000	160000	5.00
Rose-Water		144000	27000	117000	5.33

SUCCESS POINT/RESULTS

Mr. Shergill has proved that if one works hard and intelligently, then no goals are too far. By adopting floriculture he has not only shown a successful example of crop diversification, but also reaped more monetary benefits. It is clear from the Table-1 that the horticultural crops adopted by him are giving him almost double the profit than the conventional field crops. Moreover, Mr. Shergill personally encourages his fellow farmers to adopt crop diversification as a means to conserve environment and increase their income. He earns a handsome net income from floriculture as well as from value addition (gladiolus sticks, gladiolus cormels, rose and rose water) as compared to paddy-wheat rotation. By adopting crop diversification the productivity level of his different crops/ enterprises has also shown an increasing trend from the last five years, as given in Table-2.

OUTCOME/EXTENSION ASPECTS

Mr. Gurpreet has participated and given his presentations in the various seminars & conferences like the National Conference of KVKs-2011 (at Jabalpur), National Innovators Meet-2011 (at CIPHET, Ludhiana), NSFI Global Agri Connect-2012 (at IARI, New Delhi) and 5th Indian Horticulture Congress-2012 (at PAU, Ludhiana) etc. He is a regular speaker during various seminars at KVK Patiala, radio & T.V. talk shows and other farmer forums. As a result several farmers from Punjab, Haryana and Uttar Pradesh have ventured into horticulture/ vermiculture, after being inspired by his achievements.

Punjab Agricultural University has acknowledged the contribution of Mr. Shergill by honoring him with different awards & honours, the most prominent of which is the "Chief Ministers' Award" in the field of horticulture, which was awarded to him during the state level Kisan Mela, PAU, Ludhiana during March, 2011. The Indian Council of Agricultural Research, New Delhi has also conferred him with "Jagjivan Ram Innovative Farmer Award (Zonal)- 2012", NG Ranga Award (2014) and IARI Fellow Award (2016) for his innovativeness and untiring efforts to promote horticulture. Next step towards his success was processing of raw material. He starts the preparation of Rose sharbat, Aloe vera juices as well as amla juice under the brand name of "Shergill ". He is a source of inspiration to other farmers for earning more profits and conserving the environment by adopting crop diversification.

Table 2. Productivity levels achieved by Mr. Gurpreet Singh Shergill in major income generating activities during the last five years

Name of the crop/ activity	Variety	Productivity level (q/ha)				
		2011-12	2012-13	2013-14	2014-15	2015-16
Gladiolus	Novalux, Red Beauty, Salvia, Rose Supreme etc.	123000 sticks	125000 sticks	128000 sticks	140000 sticks	145000 sticks
Gladiolus Cormels	- do -	485000 bulbs	475000 bulbs	487500 bulbs	525000 bulbs	600000 bulbs
Rose	*Rosa indica*	95	100	100	110	115
Marigold	Marigold/ Gulzafri	190	195	190	200	220
Vermi compost	Red worms	230/ 2000sq.ft	235/ 2000sq.ft.	240/ 2000sq.ft.	250/ 2000sq.ft.	500/ 2000sq.ft.
Wheat	PAU recommended varieties	45	47.5	50	53.75	58.0
Paddy	-do-	78.0	75.0	81.5	80.0	84.0

Fig. 1. Various achievements of Mr. Gurpreet S. Shergill

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