



E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2019; 8(6): 1608-1611
Received: 10-09-2019
Accepted: 12-10-2019

Dr. Parveen Kumar
Scientist (Ag. Extension and Vegetable Science), KVK-Leh, Sher-e-Kashmir University of Agriculture Science and Technology, Srinagar, Jammu & Kashmir, India

Dr. Kunzang Lamo
Scientist (Ag. Extension and Vegetable Science), KVK-Leh, Sher-e-Kashmir University of Agriculture Science and Technology, Srinagar, Jammu & Kashmir, India

Dr. D Namgyal
Prof. and Head, KVK-Leh, Sher-e-Kashmir University of Agriculture Science and Technology, Srinagar, Jammu & Kashmir, India

Corresponding Author:
Dr. Parveen Kumar
Scientists (Ag. Extension and Vegetable Science), KVK-Leh, Sher-e-Kashmir University of Agriculture Science and Technology, Srinagar, Jammu & Kashmir, India

Success story from cold arid Ladakh: A blend of indigenous knowledge and innovation

Dr. Parveen Kumar, Dr. Kunzang Lamo and Dr. D Namgyal

Abstract

The research article carries the success story of Sonam Norboo, an ex service men from Chemday village in Kharu block of cold arid Leh District. Mr. Norboo, a small farmer growing vegetables, pulses and fodder on about 0.25 ha of land has set an example for others. From an area of about 823 sq. meters by raising different vegetables, he has generated a net income of rupees 126,690. The said farmer is also an innovator too. He produces off season vegetable too in protected structures. By blending his indigenous knowledge with innovations, everything he produces is totally organic.

Keywords: Net income, off season, protected cultivation, organic

Introduction

The success story represents a rare and perfect blend of indigenous knowledge and innovation. It is accomplished by 64 years old Mr. Sonam Norboo from Chemday village in block Kharu of cold arid Leh district. Mr. Narboo is a retired army person. He has three daughters and one son working in a bank. He is a small farmer owning 1.25 ha of land. All of his land is cultivable. After serving the country, Mr. Narboo retired in 2013 and then decided to devote his full time to his fields. He has also left about 6 kanals of land uncultivated as he finds it difficult to manage it. On about 0.25 ha of land, the said farmer is growing different vegetables, flowers, cereal crop wheat and fodder alfalfa, pulses like Lentil and Rajmash, fruit trees like Apple and Apricot, have plantation with poplars and raising livestock.

At present Mr. Norboo is growing many vegetables which include cucumber, summer squash, and Bottle guard, Beans, Brinjal, Cauliflower, Cabbage, Peas, Carrot, Onion, Radish, Kale, Tomato and Potato. The different vegetable crops are grown in beds of the size 2.5*2 meter. In the beds vegetables are grown in lines. Cucumber, cucurbits and Tomatoes are also raised in greenhouses.



Fig 1: Mr. Narboo in his farm showing different vegetables

Among the fruit crops he has also planted an orchard having 150 apple trees (Delicious variety) and has about six apricot trees. The orchard is yet to bear fruits. The trees are planted in rows and columns. One can also see different flowers like Marigold, Geranium, Pansy, nasturtium, phlox, chrysanthemum, Hollyhock and Aster grown by him. He has a passion for growing different flowers.

Of the different vegetables under cultivation, Mr. Norboo got the maximum from the cultivation of Water melon (rupees 38,000), followed by rupees 32,000 from peas, rupees twenty two thousand and five hundred from Carrot, rupees eight thousand from Tomatoes and so on (Table 1).

Table 1: Economics of Vegetable Cultivation

Vegetables	No. of beds (2.5*2 m)/No. of plants*	Area (in m. sq)	Cost of seed/seedlings	Source of seed	Production (in qtls.)	Rate (per kg.)	Total amount (in Rs.)
Rajmash	30	150	330	DoA	0.15	120	1800
French Beans	8	40	110	DoA	0.30	40	1200
Cauliflower	05	25	200	DIHAR	1.10	30	3300
Cabbage	05	25	200	Private vendors	2.50	30	7500
Onion	12	60	200	Private vendors	2.00	35	7000
Peas	10	50	400	Private vendors	8.00	40	32,000
Carrot	10	50	50	DoA	7.50	30	22,500
Kale *	50	-	50	Private vendors	0.70	30	2100
Radish*	60	-	50	Local market	0.50	30	1500
Summer squash*	10	05	30	KVK-Leh	0.30	30	900
Bottle gourd*	10	05	30	KVK-Leh	0.4	40	1600
Cucumber*	10	05	30	KVK-Leh	1.50	30	4500
Water Melon*	60	50	100	KVK-Leh	9.5	40	38000
Tomato	-	48	100	DoA	2.00	40	8000
Broccoli	01	10	50	DoA	0.15	40	600
Potato	-	300	180	DoA	1.2	40	4800
Total		823	2110				1,37,300

DoA: Department of Agriculture; DIHAR: Defence Institute of High Altitude Research; KVK: Krishi Vigyan Kendra

Mr Norboo raised vegetables likes Kale, radish, on ridges on sides of beds thereby using no extra space for these vegetables. Vegetables like Summer squash, Bottle gourd, Cucumber were raised in green house making use of vertical space. Tomatoes were raised under protected conditions in trenches. The data in table 1 reveals that he had a net income

of rupees one lakh, twenty six thousand six hundred ninety from production of different vegetables. He got this much amount from an area of 823 meter square only, if we work out his income from per meter square of the land under cultivation, this amount stands at rupees one fifty four.

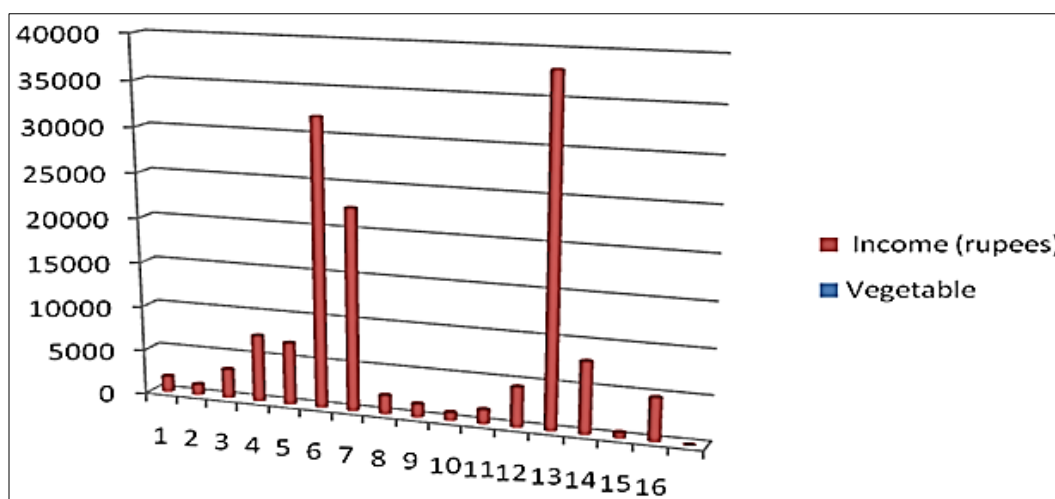


Fig 2: Graphical representation of the income from different vegetables

The graphical representation in figure 1 reveals the income from different vegetables he grows. The maximum income he

got was from Watermelon (S. No 13) followed by peas (S. No 06).

Table 2: Cost of Cultivation and Net income from vegetables

Cost of different seeds/seedlings (in Rs.)	Cost of different operations (in Rs.)		Men days	Gross income (in Rs.)	Cost of Cultivation (in Rs.)	Net income (in Rs.)
	Bed preparation 03 men days @ 500/day	Weeding 06 men days @ Rs. 500/day				
2110	1500	3000	4000	1,37,300	10,610	126,690

His cost of cultivation include the cost incurred on purchase of seed/seedlings, no. of men days used during bed preparation, weeding, picking the produce, no. of hours consumed taken for transport of the produce to market and

other miscellaneous activities. The cost of cultivation was rupees 10,610 while his net income was rupees one lakh twenty six thousand six hundred ninety (Table 2).

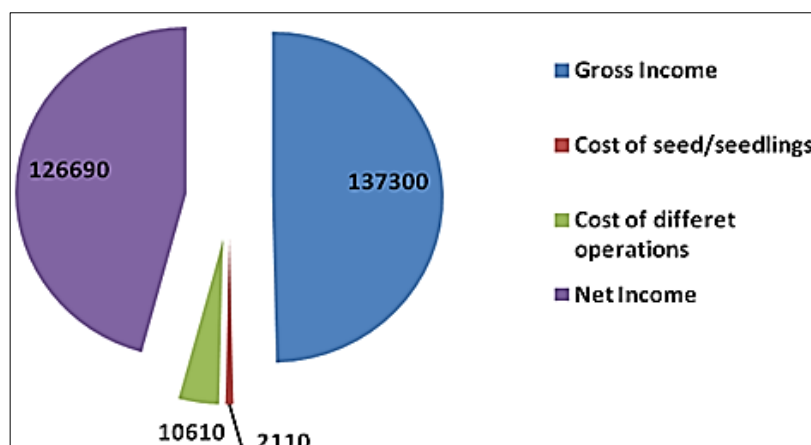


Fig 2: Pie diagram showing cost of cultivation, gross income and net income

The Innovations

a. Vermi compost Vs Compost

Mr. Sonam Narboo also experimented with two types of organic manures i. e Vermi compost and compost. He saw the effect of these two organic manures on yield of carrot. Two rows each of five plots of the size of 3*2 meters were prepared and carrot seed was sown in them. In one row of five plots he used vermi compost and in the second row with another five plots of the same size he used compost.

He found that the plots treated with vermi compost had smaller size of leaves but the fruit size was bigger. On the contrary, the fruit size was smaller and leaf size was bigger in

the plots under compost. There was also a difference in colour and taste between the produce of two different treatments.

b. Mulching vs. Low tunnels

Similarly, he also observed that the musk melon and water melon raised under black plastic mulching technology had good growth than that those raised under low tunnels.

c. Grafting

He is also raising plants through grafting. Local varieties of apples are being grafted to have plants with desirable traits. Mr. Narboo has grafted two local varieties Tha Kushu and Mongal Kushu.



Fig 3: Grafting in Apple carried out by Mr. Narboo

d. Farm pond

To overcome the water scarcity in cold months, Mr. Sonam Narboo also has constructed a farm pond. In this farm pond the water is stored and then through a pump the water is supplied to the crops. The water is stored in the pond artificially through a bore well and then after some time used for irrigation. The traditional wisdom of the peoples of this area says that it is not good to directly supply water from the bore well to the fields. Instead it should be stored for some time in the farm pond or other water harvesting structures. Storing water ensures that it gets adequate quantity of oxygen from atmosphere.

e. Vegetable processing

Different leafy vegetables and Tomatoes are sun dried and stored by him to be consumed in winter months. Vegetables like onion, carrot and potatoes are stored in underground cellars to be used during winter months

f. Totally organic produce

All that Mr. Narboo is growing is totally organic. He strongly believes that he will be consuming and making others to consume poison by using synthetic chemicals. The vegetables are produced using FYM, Night soil, vermi compost.



Mr. Narboo in his watermelon crop



Tomatoes being raised in trenches



Mr. Narboo standing beside his Farm pond

Support by Krishi Vigyan Kendra-Leh

Mr. Narboo duly acknowledges the input, advisory, diagnostic and the technological support given by the Krishi Vigyan Kendra-Leh from time to time. Krishi Vigyan Kendra-Leh has also laid out Front Line demonstrations of different vegetables and provided him with low tunnel technology. Recently a Field day was organized by KVK-Leh in his field also.