

Successful Entrepreneurs - KVK Initiative (1996-2016)



Krishi Vigyan Kendra
(National Horticultural Research and Development Foundation)

Ujwa, New Delhi - 110 073; Phone : 011-65638199
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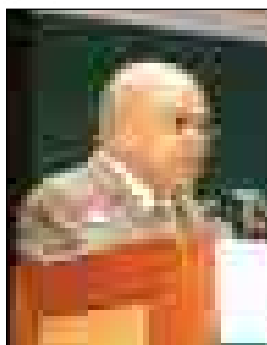
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S.K. PATTANAYAK
SECRETARY



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Government of India
Ministry of Agriculture & Farmers Welfare
Department of Agriculture, Cooperation
& Farmers Welfare

MESSAGE

It gives me great pleasure to know that National Horticultural Research and Development Foundation (NHRDF) is commemorating completion of its 40 years by bringing out a booklet titled "Successful Entrepreneurs – KVK Initiative", that aims to highlight establishment and strengthening of farmer, extension and research linkages and organizational network for increasing farm productivity.

Track record of the organization, especially in the field of research, development and production aspects of Onion and Garlic, has been praiseworthy and I am confident that the new publication will prove immensely useful as reference material to KVK professionals, extension personnel, agricultural scientists and other stakeholders engaged in agriculture and rural development.

I wish NHRDF success in its future endeavours.

New Delhi
26th December, 2017

S.K. Pattanayak
(S.K. Pattanayak)





त्रिलोचन महापात्र, पीएच.डी.

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सचिव एवं महानिदेशक

TRILOCHAN MOHAPATRA, Ph.D.

FNA, FNASc, FNAAS

SECRETARY & DIRECTOR GENERAL



भारत सरकार
कृषि अनुसंधान और शिक्षा विभाग एवं
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DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION
AND

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MESSAGE

The Indian agriculture has multi-faceted challenges related to crop productivity, land, labour and water resources. At the same time, there are emerging opportunities for better marketability of quality farm produce in view of changing consumer preferences. In this scenario, technologies continue to play a major role in achieving sustainable production, which can effectively address both challenges and opportunities in agriculture and allied sector.

The Krishi Vigyan Kendra, Ujwa, Delhi has imparted technical knowledge and skills through trainings, demonstrations and aerations that have created positive response amongst the farmers to improve traditional cultivation practices, initiate new vocations and generate additional income and employment.

I am happy to know that the Krishi Vigyan Kendra, Ujwa, Delhi (under the umbrella of National Horticultural Research and Development Foundation-NHRDF) has brought out a publication entitled “**Successful Entrepreneurs-KVK Initiative,**” which will be published on the occasion of successful completion of 40th year of the NHRDF.

I hope that this publication will be very useful for researchers, extension specialists, farmers and other stakeholders engaged in agricultural Research and Development.

(T. MOHAPATRA)

Dated the 28th November, 2017
New Delhi



डॉ. आनन्द कुमार सिंह
उप महानिदेशक (बाग. विज्ञान) एवं
कार्यकारी उप महानिदेशक (फसल विज्ञान)

Dr. Anand Kumar Singh
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Message

The horticulture sector has huge potential for improving livelihood and nutritional security of large masses in the country. In addition, the horticulture sector can provide employment to rural youth and assure higher economic return to stakeholders. The National Horticulture Research and Development Foundation (NHRDF), Nasik has greatly contributed in development of horticulture sector in the country through its Research and Development efforts. The NHRDF has come a long way in generating technologies and disseminating to farmers and other stakeholders in most effective manner. The overall developments have resulted in growing aspirations of stakeholders for more precise technologies and enhanced benefit based enterprises through horticultural crops. During the course of past development, many issues have emerged, which need to be addressed in effective and time bound manner. Publication of useful scientific books incorporating latest technologies is an effective medium of disseminating technologies to end users and help solve current problems in comprehensive manner.

I am very happy to learn that the NHRDF is completing 40 years of its dedicated service to the Nation and to commemorate the occasion, its affiliate Krishi Vigyan Kendra at Ujwa, Nazafgarh, Delhi is publishing a Technical Bulletin *Successful Entrepreneurs - KVK Initiative*. I believe that advanced knowledge on subject specific topics useful to stakeholders have been included for the benefit of users.

I complement the authors and publishers and wish them success in their future endeavours.

(Anand Kumar Singh)

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Department of Agriculture, Cooperation
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Dated: 28th December, 2017

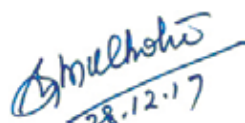


MESSAGE

The concept of vocational training in agriculture through KVK grew substantially due to greater demand for improved agricultural technology by the farmers. Krishi Vigyan Kendra, Ujwa under the aegis of National Horticulture Research & Development Foundation (NHRDF) is appreciably providing the required knowledge and understanding of the intricacy of technologies to the farmers of the region. This KVK has succeeded progressively in providing more and more skills in various complex agricultural operations for adoption on farms.

I am happy to know that KVK, Ujwa is publishing a booklet "Successful Entrepreneurs-KVK Initiatives" which depicts their achievements through its different successful farmers, farm women and youth on adoption of proven agricultural technologies for increasing the production and productivity of crops for addressing food and nutritional security.

I congratulate the team of experts of KVK for putting the success stories at one place in the form of booklet. I am confident this booklet will prove as motivational source to farmers, farm women, youth, rural organizations and other stakeholders.


28.12.17
(Suresh K. Malhotra)



डॉ. सुशील कुमार सिंह

निदेशक

Dr. Sushil Kumar Singh

Director

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Date: 28.03.2018

Message

KVK, Ujwa, Delhi has generated several success stories from the different fields viz., Agriculture, Horticulture, Livestock, Value Addition, Empowerment of Farm Women through Secondary Agriculture, etc. KVK, Ujwa has been making a very significant impact in realizing the production potential of different technology acceptable to farming community in peri-urban area of Delhi. I am happy to know that KVK, Ujwa is publishing a booklet in the form of "Success Stories" which includes details of experiences of farmers/farm women in diversifying their farms for increasing productivity on one hand and fulfilling the real demand of quality food products on the other.

We hope that this publication will encourage Scientists, Students, Extension Personnel and especially to farmers to improve their socio-economic conditions.


(S.K. SINGH)

Foreword

Transfer of technology through KVK could lead to greater success in agriculture. Therefore, the scientists of KVK's have an onerous responsibility to perform relating to technology assessment, refinement and transfer at the farmer's field.

The Krishi Vigyan Kendra, Ujwa, Delhi of NHRDF imparted technical knowledge and skills by the trainings and demonstrations that have create positive response among the farmers to improve traditional cultivation practices to initiate new vocations and to generate additional income and employment.

This KVK has made tremendous achievement in the transfer of technology at farmer's level. This center has played a vital role in empowering rural women organizing different development programmes, establishing functional linkage with the institutions and line departments and purposeful evaluation of Transfer of Technology programmes.

I am very happy to say that the staff of this KVK is bringing out a booklet on consisting success stories of the centre in compiled form "Successful Entrepreneurs - KVK Initiative". I appreciate their contribution and extend sincere thanks to the staff who have brought laurels to this KVK.

Date : 20 March, 2018
Place : New Delhi



(Dr. Bijender Singh)

Preface

Located in south west District of Delhi, the Krishi Vigyan Kendra (KVK), Delhi came into existence in 1995. It started functioning under the administrative control of National Horticultural Research and Development Foundation, New Delhi. The KVK had a very strong outreach programme, whether it was FLD's, OFT's and vocational trainings. Consequently the farmers of the area are exploiting substantial potential of the crops grown in the district.



This center took appropriate steps to motivate farmers to use high yielding varieties of different crops. Owing to effective execution of crop demonstration programme, the average productivity in operational area increased to more than double.

The vocational training programme organized by this KVK has played a catalytic role in generation of income and employment for rural youth. These trainings have bridged gap between technology generation and adoption and have accelerated production and productivity of crops in the NCT Delhi. The KVK has played a vital role in empowering rural women of the district and various development programmes. The results of such efforts made by KVK are visible in the farming community.

Krishi Vigyan Kendra, Delhi has made an effort to document such success stories in form of publication titled "Successful Entrepreneurs - KVK Initiative". This publication will help different stakeholders of agricultural development in general and officials of different line departments engaged in agriculture and allied sectors in particular in guiding their beneficiaries to make their farming activities profitable and motivate other farmers to become successful entrepreneurs.

The booklet containing the success stories of the KVK is before you. I appreciate the contributions made by the staff of the KVK and extended my sincere thanks to them. I am also grateful to my President, NHRDF and Director, ATARI, Jodhpur for their cooperation, support and motivation for bringing such type of publications.

(Dr. P.K. Gupta)

*Program Coordinator, KVK, Ujwa
Director (Acting), NHRDF*

Date : 11 February, 2018
Place : New Delhi

About the KVK

Indian Council of Agricultural research (ICAR) established the Krishi Vigyan Kendra, (KVK), at Ujwa (Delhi) in the year 1995 under the administrative control of National Horticultural Research and Development Foundation (NHRDF), New Delhi. About 40 acres of land available with the KVK and is under instructional farm including crops, orchard, the demonstration and integrated farming system unit. Ujwa is about 50 km from New Delhi railway station and 25 km from IGI airport.

Transfer of Technology (ToT) Programme:

In information age, the appropriate information package and its dissemination is equally important. It is not enough to generate information but also to see that the required information is delivered to the end users at the earliest and with least dissemination loss. In order to achieve this aim in general and mandate in particular, the KVK, Ujwa, Delhi has envisaged the TOT programmes and activities during the period.

Training programme for different target groups:

The major objectives of training are to generate the opportunities for income and employment, to provide technical know-how to the practicing farmers & farm women and to update the knowledge of in-service personnel.

Vocational trainings for rural youth:

After taking over the infrastructural facilities, laboratories and establishment of demonstration units at campus the vocational courses were started. In all 118 vocational course on the subject viz. Bee keeping, Preservation of seasonal fruits & vegetable, Nursery management, Mushroom Production, Seed production Technology, Dairy farming, Poultry Production, Vermin compost Production, Integrated farming System, Pig farming, Goat Farming and rest in cultivation of exotic vegetables, Fruit cultivation & commercial flower production. Through these trainings 2379 persons were benefitted. Vocation wise adoption of vocational training courses.

Trainings for practicing farmers and farm women:

The KVK has organized both on-campus and off campus training programmes for the practicing farmers, farm women & farm youth. The trainings were imparted on crop production, plant health care, animal husbandry, horticulture and home management. During the period 793 day long (on/off campus) training programmes were organized in different villages of Delhi. Through these trainings 14992 persons were benefitted.

In service trainings:

The field extension personnel plays an important role in transferring the latest agricultural technologies to the end users. For updating their knowledge, 227 in service trainings were organized for the village level workers and officers of agriculture department, Govt. of Delhi, Anganwadi workers & supervisors of women & child development department Govt. of Delhi.

Front line demonstration programme:

The front line demonstration programme conduct to demonstrate the proven potential of latest location specific technologies at the farmer's field. They are found very fruitful and effective tool in transferring latest crop technologies in the farmer's fields. The primary objective of demonstration is to demonstrate under real farm situation, the productivity potential and profitability of the latest crop production technologies, improved varieties, seed treatment, fertilizer application, plant protection and feed management etc. recommended for different agro-ecological and crop growing situation v/s prevailing farmer's practices.

During the period 2376 demonstrations covering 2000 ha area were laid out in farmer's field in Delhi.

On farm testing of technologies (OFT's):

This activity is mainly focused to test developed technologies which might be helpful to solve the most important and widely spread problems of groups of farmers in a defined area with in their farming system perspective with their active participation and under their management. Implementations of OFT programme has benefitted about 123 direct countries belonging to 12 villages of south west district of Delhi. The major objective of the programme is to provide tailor – made recommendations to the farmers by testing the location specific technologies to solve their field problems.

Agricultural extension activities & farm advisory services:

For speedy dissemination of technologies in the farmer's fields, the KVK celebrated/organized various extension activities in the villages and at KVK campus. During the period 10608 activities are organized. Through these activities, the Kendra has extended direct services to more than 383815 people in the Delhi region.

Seed production at KVK farm- KVK has also been involved in seed production of recommended varieties of different crops so as to provide quality seeds to the farmers of the Delhi. So far KVK has produced wheat, spinach, mustard, onion and garlic seed and distributed to farmers.

Distinct Socio-economic Impact of KVK programmes

Programme	Impact
Training programmes for different target groups Day long on/off campus training for practicing farmers	<ul style="list-style-type: none"> ○ The trained farmers/farm women have become to be known as leader and torchbearer for their fellow farmers own and neighboring villages. ○ Positive attitude, better knowledge and acquired scientific skills have made them perfect in managing their farming & animal wealth. ○ A few trained farmers have also taken up quality seed production and custom service by acquiring skills in related fields.
Vocational training courses for the rural youth	<ul style="list-style-type: none"> ○ By adopting the vocation of bee keeping 36 farmers are engaged in the vocation and getting Rs.30000 – 40000 net returns from one year old unit and Rs.1.5 to 2.0 lakh/year from 4-5 years old bee keeping unit.
	<ul style="list-style-type: none"> ○ From food processing about 65% of the participants have adopted different processing technologies at household level and 5% have adopted at commercial level. M/s Krishna Pickles, M/s Kamal Pickles, M/s Krishna Foods, M/s savtiri Pickles & Murrabba, Gramin mahila bakery unit, M/s Mangla Achaar, M/s Poorti Food Vision, BAWWA (BSF), group & SHG group Nangloi and earning an income range from 50,0000 – 4,0000000 per annum.
	<ul style="list-style-type: none"> ○ Dairy farmers are getting 15-20% more net returns from their dairy business by adopting appropriate low cost dairy management technologies and animal disease preventive measures. After getting training 26 small dairy unit (2-3 animal)are established and earning a net income of Rs. 80,000/annum and 8 big unit (10-15 animal) are established and earning a net profit of Rs. 1.50 – 2.0 lakh per annum
	<ul style="list-style-type: none"> ○ After getting the training on mushroom cultivation 12 growers are come out with the unit size of 200 – 4000 sqmt in different locations of Delhi with the income of Rs. 600000 – 800000/season.
	<ul style="list-style-type: none"> ○ After getting training of gardeners, 26 rural youths have got govt. & private jobs in different companies.
In-Service training for agriculture & women & child development officials	<ul style="list-style-type: none"> ○ After a new dimensions to their think on knowledge bank for use in operational area through advisory services to farmers/farm women. ○ Helped to the grass root level field functionaries in updating their knowledge & skill on the subject and get exposure to new technologies available.

Programme	Impact
Front line demonstration programmes	<ul style="list-style-type: none"> ○ After 20 years, the average productivity of major crops – Mustard, wheat and paddy in operational area has registered an increase of 70%, 114% and 150% respectively. ○ The most distinct impact of crop demonstration programme in the area is creation of sense of security and self reliance among the poor farmers resulting in increase in socio economic status in the area.
On Farm testing	<ul style="list-style-type: none"> ○ By adoption of tailor made recommendations, the farmers are getting more net profit from their farming. ○ By effective weed management, the farmers are getting higher production.
Dairy development programmes	<ul style="list-style-type: none"> ○ Livestock owners are growing nutritious fodder crops for high milk production and minimizing cost of milk production. ○ Through trainings and campaigns, livestock owners have become aware to animal health, balanced nutrition, clean milk production.
Extension activities and farm advisory services	<ul style="list-style-type: none"> ○ By organizing various agricultural extension activities, the farm technologies are being disseminated in wide area throughout the district.





Smt Krishna receiving Nari Shakti award from Hon'ble President Sh. Pranab Mukherjee on 8 March, 2015

Success Story 1



Value Addition of Fruits & Vegetables

A native of Bulandshahr, U.P. Smt. Krishna migrated along with her three kids to Delhi in search of livelihood after her husband lost his job in 1996. The family was passing through depressing time in 1995-96 when her jobless husband was psychologically devastated. But it was her perseverance and courage which enabled the family to face hard ship stoically and migrate to Delhi after borrowing Rs. 500/ from friend. In Delhi the family took the shelter and employment with Commandant B.S. Tyagi (Retd.) for looking after his farm at Rewlala Khanpur as caretaker. Commandant Tyagi is a hardworking and innovative farmer who is always keen to learn and adopt new ideas. He developed an orchard of *Ber* and *Karonda* at his farm under active guidance of KVK and extension officials of state government. During interaction Commandant Tyagi put up his problem of very low income



Krishna guiding her workers regarding packaging

Name	: Mrs. Krishna Yadav
Address	: 43/3, Main Nazafgarh-Gurgaon Road, Village : Bajghera, Gurgaon
Qualification	: Primary
Age	: 46 years
Nodal Training Institute	: KVK, Ujwa, New Delhi
Name of Venture	: M/s Shri Krishna Pickles
Nature of Services	: Value addition in fruits & vegetables
Annual turnover	: 5 Crore
No. of employment	: 45
Mobile	: 9868494021 9868762511
E-mail (if any)	: skp.consumer@gmail.com
Website	: www.shrikrishnapickles.com

from the sale of *Karonda* and *Ber* in the market. Several rounds of meetings and discussions were held with Commandant Tyagi along with Krishna and her husband at his orchard by KVK scientists. The couple was advised to go for value addition of farm produce through simple food processing activities.

KVK Intervention

After consulting among them Smt. Krishna Yadav attended the fruits and vegetables processing training at KVK, Ujwa, Delhi during the year 2001-2002. They were trained and provided technical guidance regarding value addition of fruits & vegetables. After the completion of training programme, relevant literature was also provided. Follow up visits were made to their unit.

After attaining the training she prepared 100 kg *karonda* pickle and 5 kg chilli pickle in which an investment of Rs. 3000/- was made including the cost of raw material from orchard at market price. The processed products were sold of Rs. 5250/-. This step encouraged them to start home scale processing of fruits and vegetables including *karonda* under the guidance of KVK, Ujwa at Delhi. In the year 2003-2004, she produced 2 kg of *karonda* candy on trial basis, but it got spoiled. She approached KVK, Ujwa for guidance, KVK expert guided the right procedure for candy preparation and she successfully prepared 5 kg of *karonda* candy. This produce was new for the area by its appearance and taste. It fetched good price and response. This initiative brought confidence in Mrs. Krishna.

Outcome & Impact

As a result of the above coordinated efforts, a



Explaining the vegetable processing techniques

full scale processing and production unit has been established with technological back up/ training from KVK, Ujwa. She has carefully developed a low cost technology package, recipes and processing protocols through field trials based on her traditional knowledge/ techniques upgraded with modern science technology inputs, availability of raw material in the area and market demand of innovative products. She started processing of *karonda*, *ber*, *aonla*, mango, chilli, ginger, garlic, lemon, carrot, cauliflower, *teent*, papaya etc. and from them preparing pickle, candy, *chutney*, preserve and vinegar etc.

The products developed are now being marketed successfully by them ensuring maximum benefit with an approach of value addition at source itself-thus reducing dependency on middlemen, reduction in post harvest losses, saving in transportation cost and time. KVK also motivated her to participate in district/state level exhibitions. As scale of production has increased, she is generating about 1500 man days of work/ employment to her neighbors.

With active guidance and hand holding by KVK scientists the entrepreneur couple is reaping rich dividends in terms of, better infrastructure, improved quality and better packaging, greater volumes and thereby good profit margins in their venture of value addition of fruits and vegetables. With vibrant hand holding and active support of scientist of KVK, Ujwa, Delhi the couple was able to cross the most crucial milestone in this venture- FPO license. In a short span of 11 years she has expanded her enterprise tremendously with 152 different types of products like pickles, *chutneys*, jams, jellies etc. At present 2000 quintals of products are generating an annual turnover of Rs. 3 corers from the factory and providing employment to others.

The President of India, **Shri Pranab Mukherjee** conferred the 'Nari Shakti

Puraskar-2015' on the occasion of International Women's Day on 8th March, 2015. The awards are given every year by the Ministry of Women & Child Development to institutions and individuals who have made exceptional contribution towards empowerment of women. *Nari Shakti Puraskar* carries a cash award of Rs. 2 lakh and a certificate.

During the year 2013, Smt. Krishna received ICAR award "N.G. Ranga farmer award for diversified agriculture" on 27th July 2013 from Hon'able Prime Minister **Shri Narendra Modi**. She was awarded for post harvest techniques in value addition of fruits and vegetables.

The couple has become a role model and source of inspiration to rural youth and to multiply this effect manifold their success story has been covered by various print and electronic media.



Smt Krishna receiving ICAR Award from Hon'able Prime Minister Sh. Narendra Modi on 27 July, 2013

सफलता की कहानी

मैं श्रीमति कृष्णा यादव गाँव डोंलतपुर जिला बुलन्दशहर में पैदा हुँ। एक किसान परिवार में जन्म हुआ। मेरे पिताजी के पास उनीगा खेत था, हमारी गन्ना बसर भी ठीक से नहीं होती थी। हम आर्यु में मेरी शादी कर दी थी, पहले बुलन्दशहर के गाँवरील गाँव में गोवरधन सिंह यादव जी के गृह में थी। गरीब किसान थे उनके पास लगभग ५ एकड़ से भी कम जमीन थी। वहाँ पर भी हालात ठीक नहीं थे। और मेरे तीन बच्चे भी हो चुके थे, दो लड़के एक लड़की, तब हमने सोचा था मुझी बाहर चले हमारे पिताजी दिल्ली देहात के गाँव नजफगढ़ क्षेत्र में बापरील गाँव में आगही में खेत लेकर उसमें खेती करते थे। तो हम बुलन्दशहर से लगभग २५ वर्ष पहले दिल्ली देहात के नजफगढ़ देवला खानपुर गाँव में खेत आगही पर लेकर उसमें सब्जियाँ उगाने का काम करने लगे। सब्जी तैयार होने पर मंडी ले जाकर बेचने लगे। मंडी में हमारी सब्जी की लागत भी नहीं मिलती थी। तब मैंने सोचा कि कृष्णा तु बुलन्दशहर से दिल्ली भी आई और वहाँ भी भारी धाँदा सहना पड़ रहा है, शाम को हम कृषि दूरान प्रोग्राम देख रहे थे तभी हमने देखा हमने कि सब्जियों से अच्छा व मुरब्बा बनाने का प्रोग्राम आ रहा है। कृषि दूरान प्रोग्राम में हमें मालूम पड़ा कि भारत सरकार ने हर जिले में कृषि विज्ञान केन्द्र खोले हुए हैं। तब हमें मालूम पड़ा कि हमारे नजफगढ़ जिले में नजफगढ़ कृषि विज्ञान केन्द्र है। तब मैंने कृषि विज्ञान केन्द्र आवा नजफगढ़ गई दिल्ली से संपर्क किया तो वहाँ पर मंडी रितु सिंह जी को गृह विज्ञान केन्द्र जल्ला में फल गा सब्जियों का प्रसंस्करण देती है तो मैंने रितु सिंह से अच्छा, मुरब्बा, जूस, जैम, जेली, शरबत, कैन्डी बनाने की इनसे ट्रेनिंग ली। ट्रेनिंग लेकर मैंने अच्छा, मुरब्बा बनाने लगी, अच्छा, मुरब्बा बनाने के बाद वह बिके नहीं बड़ी कीटनाई आई, मैंने मेरे रिश्तेदार तरह तरह की बात करने लगे मजाक उड़ाने लगे, कहने लगे कि कृष्णा तु धाँदा सह रही है। मैं बड़ी निराश हो गई पर मैंने हिम्मत नहीं हारी और मैं अपने प्रति गोवरधन सिंह यादव से कहने लगी कि देखा मैंने बड़ी मेहनत से ट्रेनिंग कृषि विज्ञान केन्द्र से ट्रेनिंग लेकर ये अच्छा, मुरब्बा बनाना है। साथ इनको बाजार में बेच कर आया, मैंने मुझे मेरे कंधे पर अच्छा मुरब्बा लेकर मेरे प्रति बाबाजी गर लेकने किसी ने नहीं खराद बोले कि इनका तो कोई बाण्ड ही है काम नहीं है कैसे बिकेगा तो मैंने इनको समझाया आप मेरे कंधे पर एक काम करके देखो खेत में बाहर मैं जाऊँ पर एक कुसी भेल डलकर बेचना शुरू करा मैं कहने पर मैंने प्रति ने हाँ के किनारे एक भेल एक कुसी डलकर गेत की ताजा मुरब्बा और अच्छा मुरब्बा बेचना शुरू कर दिया। नजफगढ़ और देवला के बीचों-बीच देवला खानपुर गाँव मंगल से बैठ गए लोग और भारी मजाक उड़ा कर चले हारा देखा मे, आदमी केसा पागल है, तो कोई बाजार है न कोई गाँव है, हम जोगल से बका है, गहा इसका काँन अच्छा खरीदगा तो ये शरीर मेरी बात बताइ तो मैंने उनको समझाया हिमात माँ हारी आप लेक रही आगहील भेरूर हमारी बिनती मुरब्बा का कोई भी काम होता या बड़ा नहीं होता बाद इसमें जगक आरही तो कोई भी कार्य करके उसमें मुकाम हासिल किया जा सकता है इस बात को मैंने श्रीमति कृष्णा यादव ने साबित कर दिया है, अच्छा-मुरब्बा बनाना

Success Story 2



Weed management in progress in onion nursery

Saplings of Livelihood : A Commercial Nursery

Name	: Mr. Satyawar
Address	: S S Nursery, village Dariya pur Kalan, Bawana, Delhi - 110036
Qualification	: Graduate
Age	: 48 years
Nodal Training Institute	: KVK, Ujwa, New Delhi
Name of Venture	: S S Nursery
Nature of Services	: Production & sale of vegetable seedlings
Annual turnover	: 9.00 lakhs
No. of employment	: 20
Mobile	: 9999099893

Narela, a peri-urban block of north district of MCD Delhi has immense potential for fruits and vegetable cultivation, but unstable yields and high cost of production are the major constraint faced by vegetable growers. The factors responsible for these problems are heavy seedlings mortality, high cost of seed, extra use of seed and unfavorable weather conditions leading to high incidence of diseases. Seeds of hybrid vegetables are sold at very high price, hence converting every individual seed into a healthy seedling becomes essential and this requires intensive nursery management and very difficult to grow the healthy vegetable seedlings in open field condition.

Hard work, dedication and some innovative thinking to make use of available resources for getting maximum benefit are practiced by few farmers. Mr. Satyawar of village Dariyapur from Narela Block of Delhi is an exception. He did higher secondary and joined family farming as his life motto. He started his path from



Sh. Satyawar observing the full bloom tomato crop

farming activities which was depending on traditional method of farming. Mr. Satyawar was much more attracted towards vegetable cultivation because it is more remunerative than cereal crop in peri-urban locations.

KVK Intervention

During the year 2012-2013 Mr. Satyawar came in KVK, there he was advised to go for raising vegetable nursery. KVK, Ujwa, Delhi conducted training programme on nursery management and he was trained in field about advanced nursery management technologies like soil solarisation, grafting, sowing, fertilization, raised beds, pest and disease management activities, etc. With the technical assistance of the Krishi Vigyan Kendra, Ujwa, Delhi, now Mr. Satyawar is engaged in raising healthy vegetable nursery of different vegetables. Mr. Satyawar while involved in vegetable seedling production observed that in order to get maximum productivity and quality of vegetable crops, seedling should be healthy, vigorous and disease free. It was observed that plants at seedling stage are succulent, highly tender and vulnerable to a number of pests and diseases. The cost of hybrid seed also warrants production of quality seedling under protected condition. Hence, raising of vegetable nursery under poly tunnel condition is very useful. Focusing on the same, KVK, Ujwa has planned and conducted vocational training course on 'Establishment of vegetable nursery with special reference to under poly tunnel', Mr. Satyawar was one of the participant in the said course. This technology helps him to grow quality seedlings early, late and at desirable time under adverse climatic conditions, eliminating danger of destruction from hail storm rains etc. Protections against biotic and abiotic stresses become easier under protected structural. The seedlings prepared under the poly tunnel are ready to transplant in 25 - 30 days in comparison to normal season.



Sh. Satyawar is working in walk in tunnel

Output

Within one year from establishment of unit Mr. Satyawar has produced around 11,60,000 seedlings of different vegetables especially tomato, cauliflower, chilli, onion etc. and marketed in Delhi and Haryana. He secured gross income of Rs. 8,70,000/- in a year. The seedlings were prepared as per demand: supply ratio in the market and climatic suitability of the crop. The existing customers in different villages are the major mass media through which the popularity of nursery products and consultancy given was made and helpful for business generation. Due to nursery establishment and income generation from that, now he become self employed in his unit. He has engaged 20-25 labours from his own village and by hardworking he is able to grasp the technologies faster and adopt it. He is actively involved in all day to day working of the farm and marketing. He can now identify important insect pest of vegetables and their management practices by his innovative idea.

Impact

Mr. Satyawan incorporated the components in such a way that it enhanced productivity and profitability in relation to the farming system model in consultation with KVK, Ujwa, Delhi.

Mr. Satyawan also provides jobs to local people to help them. The key to his success is his eagerness to learn and understand very soon, hard work and positive attitude. He is a model farmer.

सफलता की कहानी

मैं सत्यवान पुत्र श्री साहिब सिंह ग्राम व पोस्ट दरियापुर कला, जिला दिल्ली-39 का निवासी हूँ। मैंने 12वीं कक्षा तक अपनी पढ़ाई की है। मैं अपनी पढ़ाई के साथ-साथ पिता के साथ रहती हूँ भी मदद करता था। मैंने देखा कि पुराने जमाने से कुली आ रही खेती से उतनी आमदनी प्राप्त नहीं हो पाती थी कि जिससे पूरे परिवार का खर्च आगे चलाना पूरा हो पायेगा। फिर मैंने खेती से आमदनी कैसे बढ़ाया जाये, इसके लिए मैंने पता करना शुरू किया तो पता चला कि कृषि विज्ञान केन्द्र, उजवा, नई दिल्ली में इस तरह के प्रशिक्षण होते हैं। फिर मैंने केन्द्र से सम्पर्क स्थापित किया और कृषि में आमदनी कैसे बढ़ाई जाये इस पर विशेषज्ञों के साथ विचार विमर्श किया। के.वी.के में सलाह पर्याप्त मैंने नर्सरी उत्पादन तकनीकी पर व्यावसायिक प्रशिक्षण प्राप्त किया। प्रशिक्षण के एक साल पश्चात मैंने 11,66,000 सब्जियों की पौध तैयार की और उससे कुल आमदनी 8,70,000/- हुई। सब्जियों की पौध किसानों की माँग बाजार और मौसम के आधार पर तैयार करता हूँ। आस-पास के किसान हमारी गुणवत्ता को देखते हुए दिन प्रति दिन पौध की माँग बढ़ती जा रही है। साथ ही साथ पास के हरियाणा के माध्यम से और नये-नये किसान भी जुड़ते चले गये। सब्जियों की नर्सरी से फसल की उपेक्षा कम से कम समय में अच्छी आमदनी प्राप्त हो जाती है साथ ही साथ अपने गाँव के 20-25 लोगों को रोजगार का अवसर भी प्रदान कर रहा हूँ। इस कार्य से मैं प्रेरित, संतुष्ट हूँ क्योंकि मैं नर्सरी के सभी कार्य बाजार की पुँजाई से लेकर पौध तैयार होने तक खुद लगा रहता हूँ। नर्सरी में कोई भी समस्या आने पर मैं कृषि विज्ञान केन्द्र के विशेषज्ञों के सहयोग से समस्या का समाधान करता हूँ।

सत्यवान
(सत्यवान)
दरियापुर कला, दिल्ली





Showcasing her products during IITF at Pragati Maidan, New Delhi

Success Story 3



Fruits & Vegetables Preservation

Transformation of Mrs. Sudesh Rani 44 years from devoted housewife into budding woman entrepreneur in just 2 years is the mission fulfilled. Sh. Roop Chand, her visionary father, had great expectation of making her a self reliant person, whom she lost at a young age. The cherished ambition of fulfilling father's wish ultimately tickled Mrs. Sudesh Rani to call Kisan Call Centre in December, 2012 which after sensing her enthusiasm advised her to contact Krishi Vigyan Kendra, Ujwa, Delhi.

KVK Intervention

Mrs. Sudesh Rani visited Krishi Vigyan Kendra, Ujwa, Delhi during the year 2013 and met the scientist team led by Sh. R.K. Yadav, Programme Coordinator. She expressed her resolve to venture into apiculture and value addition of fruits and vegetables activities. After SWOT analysis of her case, KVK team prescribed her the Road Map- undergo training, form a firm plan and start activities, arrange fund from KVIC/NABARD/Bank/ other source; undertake brand promotion, talk to experts for help.

Mrs. Sudesh Rani religiously followed the Road Map prescribed by KVK, Ujwa, Delhi to her. She underwent training on bee keeping from KVK and Khadi and Village Industries Commission (KVIC) Training Center, Muzaffarnagar (UP). After hand on experience in apiary for few months from Sh. Naresh of village Banot, Shamli (UP), an experienced bee keeper, she started with 20 bee boxes in September 2013. Mean while she got registered the firm, M/s Krishna Food, in May 2013 at Delhi. She engaged professional consultant for design of product label under the brand 'Shree Roop' in memory of her father. She started processing and packing of honey.

Name	: Mrs. Sudesh Rani
Address	: Plot no. 395, Khasra no. 235/14, Kotla Vihar, Phase-I, Delhi
Qualification	: Graduate
Age	: 46 years
Nodal Training Institute	: KVK, Ujwa New Delhi
Name of Venture	: M/s Krishna Foods
Nature of Services	: Bee keeping & value addition in fruits & vegetables
Annual turnover	: 3.00 Lakh
No. of employment	: 5
Mobile	: 9818491968
E-mail (if any)	: roophoney013@gmail.com

Output

She got Food Safety and Standards Authority of India (FSSAI) license for honey packing from Department of Food Safety, New Delhi in October 2013. She somehow lost confidence in tackling bee keeping issues and was hesitant to start preservation of fruits/vegetable on commercial level. Mrs. Sudesh Rani was in regular touch with KVK, Ujwa, Delhi and discussed the issue. In order to hone up her skills and gain confidence she took training on beekeeping and fruit /vegetable preservation in December 2014 and January 2015 respectively from KVK, Delhi.

It tremendously helped her in fine tuning in bee keeping activity and starting vegetable/fruit preservation on commercial scale. She got FSSAI license also for pickles, jam etc. in January 2015. KVK, Ujwa, Delhi facilitated the online submission



Smt. Sudesh doing packing of processed products

of her loan proposal of Rs. 15 lakh with KVIC in August, 2015. With continuous support and handholding from KVK, Ujwa, Delhi Mrs. Sudesh Rani has standardized her production techniques and got exposure for participation in exhibitions and media publicity.

Outcome

Mrs. Sudesh Rani has exhibited her products in Pusa Krishi Mela 2014, Agriculture Exhibitions arranged by KVK, Delhi, Pusa Krishi Vigyan Mela 2015, Aam Mohotsav 2015, Dilli Haat, Janakpuri, Delhi on Mahila Diwas (March 2015) and India International Trade Fair 2015, Pragati Maidan. KVK promoted her to appear in DD Kisan Channel in their Hallo Kisan Programme regularly. Her story was broadcasted by All India Radio (AIR) in Aakashwani Programmes with the support of KVK, Ujwa, Delhi. She also become master trainers in KVIC food processing trainings programmes.

Mrs Sudesh Rani is producing and packing 4,000 bottles honey and 3,500 packs of jams, pickles and chutney under brand name of 'Shree Roop'. It is spectacular performance because Mrs. Sudesh Rani has achieved this level in just 2 years without any financial help from any institution. It is just beginning and holds great promise.

Annually, she packed 4,000 bottles of honey and 3,500 packs of jams, pickles and chutney with the help of family members and earning Rs. 10,000/- to 15,000/- per month with annual turnover Rs. 5 lakhs. She has achieved father's dream and wanted to enhance her business.

Impact

As a result of the above coordinated efforts a full scale processing and production unit has been established. She has carefully developed a low

cost package, recipes and processing protocols through field trials based on her traditional knowledge and techniques by KVK upgraded with modern science technology inputs, availability of raw material in the area and market demand of innovative products. The products developed are now being marketed successfully by them ensuring maximum benefit with an approach of value addition at source itself-thus reducing dependency on middle-men, reduction in post harvest losses, saving in transportation cost and

time. A new sense of accomplishment by way of new skills and earning independent incomes has given her the confidence to bring about other reforms in their lives.

Moreover, local processing has helped not only in extending the shelf-life perishable produce, but also in generating local employment in rural production system. Recently Smt. Sudesh got sanction a loan of Rs. 10 lakh under stand up India programme of Govt. of India.

सफलता की कहानी

मेरा नाम सुदेश रानी सहरावत है। मैं एक साधारण गृहणी हुआ करती थी। परन्तु मेरे मन में शुरू से ही अपना व्यवसाय करने की छलक थी। लेकिन मेरे पास किसी प्रकार की तकनीकी योग्यता नहीं थी। जिसके चलते मुझे बड़ा दुख होता था। फिर एक दिन मुझे पूसा कृषि विज्ञान मेले में जाकर मुझे ये बात हुआ कि कृषि विज्ञान केन्द्र उजवा की तर्फ से कई प्रकार के निशुल्क, रोजगारोपक, प्रशिक्षण कार्यक्रम आयोजित किये जाते हैं। तब मैं कृषि विज्ञान केन्द्र उजवा जाकर वहाँ के कार्यक्रम समन्वयक डॉ. R.K. Yadav जी से मिली। उन्होंने मुझे वहाँ पर चलाई जा रहे विभिन्न प्रकार के प्रशिक्षणों की जानकारी दी और साथ ही डॉ. रितु सिंह के फल सब्जी प्रशिक्षण की अनुमति प्रदान की।

डॉ. रितु सिंह के द्वारा प्रशिक्षण प्राप्त कर उनकी देखरेख में मैंने घर से ही अपना व्यवसाय शुरू किया। समय समय पर उनकी सहायता से मेरे द्वारा बनाए गये उत्पादों में सुधार हुआ और उन्होंने गुणवत्ता में और सुधार किया। साथ ही साथ उन्होंने भारत सरकार द्वारा चलाई जा रही विभिन्न स्कीम के बारे में जानकारी उपलब्ध करवाई व मेरा बैंक में खाता खुलवा कर खादी ग्रामोद्योग में लोन रेशनलेशन लगवाई जो अभी Under Process है।

डॉ. राणा के सानिध्य में मैंने मध्यमस्त्री पालन का डॉ. राणा के दिये गये प्रशिक्षण के फलस्वरूप आज मैं एक सफल मध्यमस्त्री पालक भी हूँ।

डॉ. यादव की प्रेरणा स्वरूप व उनके सहयोग से वर्ष 2015 में IICR द्वारा आयोजित पूजा कृषि विज्ञान मेले में अपने द्वारा बनाये गये उत्पादों का प्रदर्शन व बिक्री भी जिससे मुझे प्रोत्साहन के साथ-साथ प्रभावित भी हुआ।

यहाँ मैं डॉ. राकेश काशीवाणी विशेषज्ञ का भी जिक्र करना चाहूँगी, जिनके द्वारा हमें शाक सब्जी व भागवमी के विषय में जानकारी मिलती रहती है। डॉ. राकेश की प्रेरणा स्वरूप मैंने अपने घर में किचन गार्डन लगाया है जिससे मुझे

शुद्ध व ताजा सब्जियाँ प्राप्त होती हैं जो कि एक लाभ तो मेरी रसोई में शाक सब्जी का खर्च कम हुआ है वही मुझे जैविक सब्जियों को खाने का सौभाग्य प्राप्त हुआ है।

मैं KVK उजवा की धात्री हूँ जिसकी वजह से मेरे जीवन को एक नई दिशा मिली है। जिसके कारण आज मैं प्रगति के पथ की ओर अग्रसर हूँ।

मैं KVK उजवा के सभी अधिकारियों और कर्मचारियों को हार्दिक धन्यवाद देना चाहती हूँ विशेषतः पर KVK उजवा में कार्यरत डॉ. हिमांशु पाण्डेय पशु विशेषज्ञ व डॉ. Y.P सिंह कृषि प्रसार विशेषज्ञ की वृत्त यादव सहायक भूदा विज्ञान एवं सी मती मंजू सहस्रपत और श्री कृष्ण कुमार का भी विशेष धन्यवाद करना चाहूँगी। इन सभी के द्वारा मुझे समय-समय पर प्रेरणा और सहयोग प्राप्त होता रहता है।

सुदेशा





Sh. Kunal awarded NG Ranga, ICAR award from Hon'able Union Agriculture Minister, Govt. of India on 16 July, 2016

Success Story 4



Farm Diversification for Higher Profitability

Farmers are always trying to increase their yield and income from crops. Whatever crop they might cultivate, the bottom line is to invariably get a good price from their produce. Farmers can increase their income either by intensifying the existing enterprises or can move towards diversification (by growing new crops), value addition, or successful market linkages to improve their economic level. Sh. Kunal Gahlot is a good example of this strategy; He has undertaken farm diversification to enhance farm profits. With the expertise of KVK scientists he was advised to go for diversified farming. Convinced by



KVK scientists visiting mushroom unit of Kunal Gahlot

Name	: Mr. Kunal Gahlot
Address	: Village : Tigipur, Delhi - 110036
Qualification	: Graduate
Age	: 38 years
Nodal Training Institute	: KVK, Ujwa, New Delhi
Name of Venture	: Diversified Farming
Nature of Services	: Vegetable & vegetable seed production, mushroom production, flower cultivation under protected condition
Annual turnover	: 22-24 Lakhs
No. of employment	: 20
Mobile	: 9910075999
E-mail (if any)	: kunalgahlot78@gmail.com

the scientists, he diversified his enterprise into successful venture under the guidance of KVK.

KVK Intervention

After observing his potential KVK, Delhi established a farmers club named Bhoomi Putra Krishak Club in collaboration with NABARD for better farmer linkage in Alipur block during 2010-11. To improve the skill of farmer's club members KVK arranged a visit to Indian Institute of Horticulture Research (IIHR), and other important horticulture farms in Bangalore, which was arranged through financial support of NABARD. Since Shri Kunal is a hardworking and innovative farmer who is always keen to adopt new ideas.

On technical advice of the KVK scientists he diversified his enterprise into successful venture with adopting different advance technologies, which are under as detailed below:

Early cucumber production

There is ample scope of enhancing profits by early and late cultivation of vegetables in Delhi. Cucumber is especially suitable crop Alipur block of Delhi. Hence it caught the fancy of Sh. Kunal and his fellow farmers. But the problem of white fly in the cucumber started causing extensive damage to this input intensive crop. KVK scientists with Sh. Kunal standardized the date of sowing in a manner which fetched high price of the early crop. The concept of early cucumber production resulted in good profit to him. This pattern has become so viable that farmers of few villages in Alipur block of the district cultivate cucumber in more than 60 percent area and earn up to Rs. 1,60 lakh/ha (net income) in four months which is far remunerative than contemporary wheat crop. Now more growers have join hands with Sh. Kunal to take up this venture.

Short duration vegetable crops

To improve the farm productivity Sh. Gahlot has put 3.0 acre of land under various short duration vegetable crops like radish, turnip and spinach in both the season. This cropping system provides him an annual net income of Rs. 1.2 lakh.

Cereal Cultivation

Sh. Kunal Gahlot is growing newly released high yielding varieties of wheat and paddy (Basmati) in 25 acres which give annual net return of about Rs. 4.7 lakh per cropping season.

Mushroom production

He undertook mushroom production training from NHRDF, Delhi, parent institute of KVK, Ujwa, Delhi and HAIC, Murthal. He is growing white button mushroom in 0.5 acre, he start cultivation in September and continue till February or early March. The average selling price of mushroom is Rs. 70/kg. He is earning a net profit of about 2.20 lakh from temporary shed spread. After the termination of the crop he use spent mushroom substrate as manure in field and bamboos and other plastic materials are bundled for use in next year.

Vegetable Seed Production

He has also been working with IARI- NABARD research project and producing hybrid seeds of IARI varieties of vegetable crops. This project links farmers to NSC for seed production program. A linkage was established between Seed producer farmers, IARI-a research institute developing hybrids/varieties and National Seed Corporation- a commercial seed producing agency which have resulted in mass production of quality seeds of selected vegetable varieties in a partnership mode for ensuring sustainability of these small enterprises. Last year, he produced 48 kgs of IARI cauliflower variety *Pusa Sharad* under this project in supervision of IARI breeders



Scientific advisory at Kunal's farm

and earned a gross income of Rs. 2,20,000/- per ha in a season.

Production of vermi-compost

To manage the farm waste he also starts vermi-compost at his farm. He started with 500 m² area and producing 7.5 ton of vermi-compost per year for his farm. Besides saving fertilizer cost it improves soil fertility of his farm.

Use of improved agriculture equipments

Mr. Kunal Gahlot is always use adopt latest tools/equipments for growing of crops. He use bed planter growing vegetables on raised bed which saves water and improve the yield and quality of produce. He is using the technology of Rotavator for preparation of land for sowing of wheat after paddy. Mr. Kunal is also use Chisel Plow for initial loosening of the soil

while leaving the trash on top. It is usually set at 8" to 12" deep. The maximum depth is 18".

Outcome

He has undertaken farm diversification to enhance farm profits. Diversification towards low input- high value crops/enterprises viz, cultivation of button mushroom through low cost technology, off season and before season vegetable cultivation, mixed vegetable crop system effective management of crop residues, vermi- composting, integrated nutrient management, intercropping, use of improved farm implements etc. has potentially increased net farm income from Rs 5 lakhs in 2003 to Rs 35 lakhs in 2014-15. He has intensified the existing enterprises and moved towards diversification, value addition, and successful market linkages.

He has diversified from the traditional crops to intensive vegetable crops combined with mushroom cultivation and vegetable seed production to enhance income and ensure economic stability through farming on the basis of scientific and modern methods. The adopted model is serving as integrated and sustainable farming model through diversification of profitable units and marketing linkages.

Impact

By adopting new package of practices/management strategies, he is producing wheat, paddy, mushroom, early cucumber, exotic vegetables, tomato, radish, chili, cabbage, seed of cauliflower, paddy and bitter gourd and vermicompost etc. He is having the resources/inputs in his enterprise, presently 20 men/women are employed on regular basis and about 40 men are engaged on seasonal basis. Bringing about radical change in sustainable management of production and marketing of the produce. In 2013, he received training on Seed Production from IARI. Subsequently, he has signed a MOU with NSC, New Delhi for producing seeds of cauliflower, paddy and bitter gourd etc. he has invented the prevention of outbreak of *Bakane* disease in paddy during the year 2010-11 through stopping the irrigation and drenching

with Carbendazim @250 g/acre. With the assistance received from National Horticulture Mission, he has established hi-tech protected cultivation unit of 2 hectares for parthenocarpic cucumber and cut flower production in off season. He has broadened his own agriculture based enterprise thereby generating a large scale employment and income generation opportunities to the other farm youth. Enhancement in income of these people had transformed their quality of life. He is playing an instrumental role in organization of soil health and water conservation programmes at state line department and research institutions. He is regularly involved in dissemination of agricultural information / recent implementable technologies/ farmer innovations for mass spread through regular TV shows and Radio talks.

During the year 2015, on foundation day of ICAR Sh. Kunal Gahlot received an 'N.G. Ranga best farmer award in diversified farming' from Hon'ble Union Agriculture Minister, Sh. Radha Mohan Singh.

Sh. Kunal is truly a torch bearer and percolates new concept, variety, package of practices and ideas among the farming fraternity in the Alipur block.

सफलता की कहानी

मैं कुनाल बाइलौत गांव तीगीपुर में खेती के काम में पिछले 16 सालों से कर रहा हूँ। मेरी स्त्री वन्यमन से ही पैदा-पौधे तथा प्रकृति से रही जिससे मैं प्रकृति में रहकर उसी में वृद्ध करने को हमेशा इच्छुक रहता। अपनी स्नातक तक पढ़ाई करते-2 मैं खेती करने लगा। मैंने अपने पिताजी जो पारम्परिक (गोदू-धान) की खेती कर रहे थे उनसे कुछ नया फसल (सर्किजो) की खेती करने को कहा। तो उन्होंने नुकसान का कवक मुझे मना कर दिया।

परन्तु मैं उनके मना करने के बाद भी कृषि-विज्ञान केन्द्र से Baby Cow का बीज ले आया। तब पिताजी ने बड़ा गुस्सा किया। फिर भी मैंने उन्हें मना लेने के बाद 3 सप्ताह में Baby Cow लगाया। फसल तैयार होने पर जब से Baby Cow बाजार में ले जाने गया तो सभी ने उसे खरीदने से मना कर दिया। जिसका कारण यह था कि जानकारी के अभाव में मैंने उसके ऊपर का पराग समग्र से नहीं निकाला और फल में बीज आ चुका था। उससे पिताजी से एक बार फिर बड़ी बोर मची, पर इस बार ये जोतें मेरे लिए एक Active-Learning थी। मैं कृषि-विज्ञान केन्द्र उज्जैन गया। वहाँ से मैंने महारूम व कई तकनीकी सर्किजो के बारे में जानकारी ली।

सन् 2001 में फिर मैंने खीर का उत्पादन करना प्रारम्भ किया। हिंदू धर्म में जहाँ किसी शरीर में खीर का उत्पादन नहीं था। मैंने खीर उमड़ाया और इस बार सैच से कहीं अधिक आमदनी का लाभ उठाया। और परिवार के साथ-2 इस बार पिताजी भी बहुत खुश थे।

पिताजी की खुशी तो इतनी थी कि उन्होंने सारी खेती मुझे ही सौंप देने तक का निर्णय कर लिया। वहाँ से नया होचल व उमरा के साथ बढ़ता-चला गया। 2002 में मैंने महारूम की खेती की जिससे भी मुझे अत्यधिक लाभ हुआ।

उसके बाद तो जैसे जैसे समयों को पकड़ बना गोमे को रक के बाद रक मैंने बहुत सारी Vegetable व अन्य फसलें की जिससे Brakli, Red cabbage, yellow carrot, chinese cucumbers, Squash, Goya sang, France bean, जैसे Market में demandable सब्जियाँ उगाई व अल्पाधिक लाभ कमाया।

मैंने इस सफर से प्रेरणा लेते मैंने कई किसान आई भी प्रेरित हुए। और वे भी नई-2 सब्जियों की फसलें लेने लगे अपने खेतों में। जिसके बाद में मैं अपने कई किसान-भाईयों को लेकर बैंगलोर गया। जहाँ हमने net-house, poly-house, व green house जैसी तकनीक में खेती करना सीखा। जहाँ वहाँ हमने एक फसल व सब्जियों के उत्पादन को सीखा साथ ही साथ उनके बीच उत्पादन की जानकारी भी प्राप्त की। उसके बाद मैंने कई किसानों को साथ लेकर एक किसान क्लब बना भी निर्माणा किया। जिसमें मैं किसानों को कृषि-विज्ञान अनुसंधान लेकर समग्र-2 पर ट्रेनिंग लेता और ट्रेनिंग दिलाता रहा।

जिससे मैं और मेरे किसान आई अच्छी फसलें करके अच्छे से अच्छा मुनाफा कमा रहे हैं। सब्जियों की फसल के साथ-2 में protecting - farming की तकनीक को अपनाते हुए फलों की खेती भी कर रहा हूँ। जिससे 1 एकड़ में 10 से 12 लाख सालाना मुनाफा हो जाता है। मेरे साथ-2 और भी किसानों का net-house, poly-house जैसे protecting farming की और स्थान बढ़ रहा है।

इन सब कौशलों के लिए मुझे सरकार द्वारा national award से भी सम्मानित किया गया है। जिससे मैं और उत्साह बढ़ा है। और कृषि क्षेत्र में और बेहतर करने का प्रेरणा मिली।

मैं कुशल महानगर कृषि को उस उंचाई पर पहुँचाना चाहता हूँ जहाँ मेरे जन्मदाता को से नहीं भारत-भारत को मुझ पर गर्व हो। मैं भारत-भारत की इस मिट्टी का लाल अपने खून-पसीने से सौना उगाना चाहता हूँ।

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कृपाल जेठानी



Sh. Arun with his wife doing sieving of produced vermi-compost

Success Story 5



Revenue Generation through Vermi-culture

Farmers are always trying to increase their yield and income from crops. Whatever crop they might cultivate, the bottom line is to invariably get a good price from their produce. Farmers can increase their income either by intensifying the existing enterprises or can move towards diversification (by growing new crops), value addition, or successful market linkages to improve their economic level. Sh. Kunal Gahlot is a good example of this strategy; He has undertaken farm diversification to enhance farm profits. With the expertise of KVK scientists he was advised to go for diversified farming. Convinced by the scientists, he diversified his enterprise into successful venture under the guidance of KVK.

KVK Intervention

After observing his potential KVK, Delhi established a farmers club named Bhoomi Putra Krishak Club in collaboration with NABARD for better farmer linkage in Alipur block during 2010-11. To improve the skill of farmer's club members KVK arranged a visit to Indian Institute of Horticulture Research (IIHR), and other important horticulture farms in Bangalore, which was arranged through financial support of NABARD. Since Shri Kunal is a hardworking and innovative farmer who is always keen to adopt new ideas.

On technical advice of the KVK scientists he diversified his enterprise into successful venture with adopting different advance technologies, which are under as detailed below:

Early cucumber production

There is ample scope of enhancing profits by early and late cultivation of vegetables in Delhi. Cucumber is especially suitable crop Alipur

Name	: Mr. Arun Kumar
Address	: Village : Malikpur, PO - Ujwa, New Delhi - 110073
Qualification	: Senior Secondary
Age	: 37 years
Nodal Training Institute	: KVK, Ujwa, New Delhi
Name of Venture	: Neelkanth Vermi- compost
Nature of Services	: Ornamental plants nursery & vermi-compost production
Annual turnover	: 2.00 Lakh
No. of employment	: 2
Mobile	: 9210763886

In the traditional farming system organic manure is an indispensable component of soil. Vermi compost is one of the organic manures, which plays a vital role in sustaining the productivity and improving physical condition of soil without any deleterious effect of soil health and environment. Vermi-culture is an easy and effective way to recycle agricultural wastes in to nutrition rich compost by earthworm activity. Vermi-compost is a valuable soil amendment and may replace the chemical fertilizers to more extent. Vermi-compost is rich in N, P and K nutrients and also contains micronutrients, certain hormones, enzymes beneficial bacteria and actinomycetes which improve soil fertility and enhances quality of crop product. Vermi-technology is popular because it is a simple methodology with low investment and does not need sophisticated infrastructure. To process one ton of organic matter daily, it would require about 1500 sq meters of space with 6 workers.

It would produce about 70 tons of earthworms casting annually. Innovative, interested and talented rural people can be successful entrepreneurs in vermi-compost production and accruing profits will enhance their life style and income. They will be able to spend time usefully by getting job opportunities with the help of self-employment schemes

KVK Intervention

The transfer of vermi-culture technology is highly successful and can be widely adopted by the farming community. It has a visible impact on the economic upliftment of youth and farm women. Few years ago, Mr. Arun Kumar, from village Malikpur visited the KVK and got training in vermi-compost production. He was so happy with the training and guidance of KVK, Ujwa, Delhi that he immediately started vermi-compost production at his farm. He got 1 kg earthworms (red worms i.e. *Isonia foetida*) from



Mr. Arun showcasing his produce during exhibition



Sh. Arun Kumar working at his compost unit

KVK. Earlier he started vermi-composting in open ground under tree shade. The experiment was very successful, Next year he established well developed vermi-compost unit of 10×3×1 ft with 15 beds and total area of 900 sq ft. The pucca structure is constructed.

Outcome

Mr. Arun Kumar was happy due to the growing demand for compost from other groups and they were convinced with the superiority of farm produce due to the use of compost in their own fields. Mr. Arun Kumar is very enthusiastic about his new enterprise; he is continuously searching the new ways for improving his vermi-composting unit. He learnt various methods to prepare the vermi-compost in more efficient and economical way. He is also mixing the leaves and seeds of neem and used flowers as a waste

material in vermi-compost. The technology of vermi-compost production started disseminating to neighbors as well to nearby districts. His unit is closely monitored by KVK, Ujwa, Delhi through visiting the units frequently and proper guidance is given on need basis. Other farmers are also motivated through off campus trainings. KVK also associated with other development departments such as Department of Agriculture, All India Radio, TV, NGO's etc. to spread the message of organic farming and vermi-composting among the farming community. The importance is also highlighted during exhibitions and Kisan Melas. Sh. Arun Kumar started selling vermi-compost under his trade name "Neelkanth Vermi-compost". He is contacting societies, hotels, schools, offices etc. by his printed pamphlets. He is receiving more number of orders than the amount he can supply and in view of perspective of this enterprise he has the plan to expand the vermin-compost unit at larger scale.

Impact

Today, Mr. Arun Kumar is producing about 30 qt of vermi-compost per year from 15 beds. About 3,000 kg vermi-compost is sold in the market @ Rs. 6.00/kg, earning Rs. 60,000 per quarter months.

The impact can be assessed from the fact that the farmer has been able to supplement his income and also develop himself as role model for the unemployed rural youth of the area. He has built up a good rapport with his clients and is a popular supplier in Delhi blocks.

सफलता की कहानी

मैं अरुण कुमार 51, धर्मपाल गांव मालिकपुर का निवासी हूँ। मैंने 12वीं तक गांव के स्कूल में पढ़ाई की है। मैंने आगे की पढ़ाई पारिवारिक जिम्मेदारी बढ़ जाने के कारण नहीं की। मैं अपने पिता के साथ खेती में हाथ बटाने लगा। मैंने परम्परागत तरीके से खेती करने शुरू की जिसमें मुझे बहुत अधिक फायदा नजर नहीं आया। फिर मैंने इससे लिए कृषि विज्ञान केन्द्र इलाहाबाद से सम्पर्क किया और वहाँ से कैचुअर की खाद बनाने का प्रशिक्षण लिया। इससे उपरान्त कैचुअर उत्पादन का कार्य अपने खेत पर 50 वर्ग गज में शुरू किया। * पहले साल मुझे लगभग 20 क्विंटल खाद प्राप्त हुआ। धीरे-धीरे मैंने अपना कार्य करने के लिए क्षेत्रफल का आकार बढ़ाया। आज 200 वर्ग गज क्षेत्रफल में कैचुअर उत्पादन का कार्य कर रहा हूँ। प्रतिवर्ष 80 क्विंटल कैचुअर की खाद का उत्पादन कर रहा हूँ। साथ ही साथ हमने जीवन खेती की शुरुआत की। जिससे हम परम्परागत खेती की अपेक्षा हमारी आमदनी कई गुणा बढ़ गई। जिससे हमारे जीवन का स्तर पहले से अच्छा हो गया। इससे लिए मैं कृषि विज्ञान केन्द्र दिल्ली की धन्यवाद देता हूँ।

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अरुण कुमार
51, धर्मपाल
गांव व डा० मालिकपुर
नई दिल्ली 110073
M. - 9210763886
8920831687
9210575094



Success Story 6

Smt. Sunita received innovative farmer award from Hon'ble MoS (Agriculture) Sh. Purusottam Rupala during Krishi Unnati Mela-2018



Processing of Pearl Millet

The rural Delhi is undergoing tremendous change and unprecedented transformation, especially shift from farm to non-farm economy in NCT region and adjoining areas. Declining land-holding, rain fed conditions, landlessness is cause of concern in the state. This calls for development of farm based social micro enterprises especially value addition of pearl millet and locally produced fruits and vegetables. This can play an important role by providing health package to the people coupled with their sustainable economic development too. Moreover nutritionally rich high yielding varieties of pearl millet are coming up on a larger area. This nutri-millet will provide health package to people by preventing them from micro-nutrient deficiency diseases. Value added products of pearl millet can also provide

Name	: Mrs. Sunita
Address	: H. No. 19, Village : Mitraon, Nazafgarh, New Delhi - 110043
Qualification	: 8th
Age	: 46 years
Nodal Training Institute	: KVK, Ujwa, New Delhi
Name of Venture	: Gramin Mahila Bakery Unit
Nature of Services	: Value addition in pearl millet (<i>bajra</i>)
Annual turnover	: 8.00 Lakhs
No. of employment	: 14
Mobile	: 9212762144



Sh. Parvesh Sahib Singh Verma, MP visiting the stall of Smt. Sunita



Smt. Sunita working in bajra bakery unit

nutritional security and economic empowerment of rural women.

KVK Intervention

KVK, Ujwa, Delhi has been conducting trainings, demonstrations and other extension activities on value addition of pearl millet. Rigorous campaigning through trainings, demonstrations, extension literature, exposure visits has been done on nutritional importance of pearl millet as a rich source of protein, calcium, iron, potassium, fiber and other micro-nutrients essential for good health. On farm trial was also conducted on pearl millet/bajra biscuits for assessment and refinement for further modifications. During the year 2012-13 KVK conducted vocational

training on processing and value addition of pearl millet, sponsored by NABARD, New Delhi. The technique for making pearl millet biscuit attracted the one of trainee Smt. Sunita from village Mitraon and wants to start this as an income generation enterprise. Smt. Sunita running a Self Help Group (SHG), named Ganga SHG with the support of NGO named Gramin Shiksha Evam Sahyata Association. She was very keen to involve her group members in this enterprise and in future want to establish this practice as a source of regular income generation enterprise by involving more women. Training and high level motivation encouraged her to start her own entrepreneur of *bajra* biscuit bakery unit. Smt. Sunita has started with the initial investment of Rs. 4,000/



Smt. Sunita awarded for best value added bajra biscuit during farmer fair at Muzaffarnagar



Smt. Sunita received certificate from KVK on successful completion of value addition of pearl millet

and baked 8 kg of bajra biscuits at local bakery. At that time only 10-12 packets were sold in local market and rest were distributed in neighborhood for tasting, since the product was new for the area and was not liked very much by the locals. Smt. Sunita put up this problem to KVK expert, she was guided the right procedure for bajra biscuit preparation and refinement in recipe of pearl millet biscuit was done as per the opinion of majority of people while conducting on farm trial and she successfully prepared bajra biscuits as per guidance. During the year 2013-14, KVK expert motivated her to participate in the Pusa Krishi Vigyan Mela, she participated in the Mela by putting up a stall to showcase her value added bajra biscuits, with an investment of Rs. 5,000 – 6,000/ the bajra biscuits fetched a good price i.e. Rs. 18,000-20,000. This initiative brought confidence in Smt. Sunita. After that she put up the stall at India International Trade Fair (IITF) at Pragati Maidan, New Delhi and

Suraj Kund Mela at Faridabad from where she got a good response. With support of KVK she participated in Pusa Horticulture Show in February, 2016, held at IARI, New Delhi. At that show she won first prize for her bajra biscuit (under best product category), as this was new, nutritious and tasty product in the market.

Outcome

During the year 2015-16, she applied for setting up of small scale bakery unit through Prime Minister Employment Generation Programme (PMEGP) scheme of Khadi and Village Industries Commission (KVIC), New Delhi. The loan amount of Rs. 4.0 lakh was sanctioned to her during the same period. Which was not sufficient to establish a bakery unit so she borrowed some amount from Self Help Group. As a result of the above coordinated efforts, a full scale production unit has been established with technological back up/training from KVK,

Ujwa. She has carefully developed a low cost technology package, recipes and processing protocols through field trials based on her traditional knowledge/techniques upgraded with modern science technology inputs, availability of raw material in the area and market demand of innovative products.

Impact

In a short span of 3 years she has expanded her enterprise tremendously with 15 different types of *bajra* biscuits like *bajra-jeera* biscuit, *bajra-ajwain*, *bajra-til*, *bajra-coconut*, *bajra-besan*, sugar free biscuit, gluten free biscuits and *bajra* chocolate biscuit especially for children etc. At present 12-14 quintal *bajra* biscuits are

generating an annual turnover of Rs. 8 lakh from the unit and providing employment to others.

She has proved her capacity in various forum organized by State and National institution and got appreciation for her product by people everywhere. Thus, the encouragement and motivation of KVK scientists broke all the barriers of her way and she is progressing day by day. Her confidence level has also increased a lot. His story is a source of inspiration and motivation to all members of society. Her success story has been covered by various print and electronic media like news papers (Hindi), Doordarshan channel, and All India Radio (AIR).

सफलता की कहानी

मेरा नाम सुनीता है मैं गांव सिताऊ से हूँ
 मैंने 2013 में के.वी.के. उजवा से बीजरा विस्तार
 की है। मैंने जीपी जब मैंने पहली बार घर
 पर बिस्तर बनाते कि कोशिश को तो मैं नाकाम
 रही और बिस्तर जल गए मैंने आगेले रात फिर
 कोशिश की डा. रिदु सिह ने मुझे हिमल दे और
 अपने आप को मैंने संजबूत किया बनाया और
 फिर कोशिश कुछ जल गए और कुछ बने
 गए मैं उपाय नहीं लिखी नहीं हूँ मैं इसीलिए
 सोचन संभल नहीं पाई फिर एक महीना
 बनाई पहली बार मिली और मैं बिस्तर
 बनाया फिर मैं बच्चे वाले मैं बहुत अच्छे
 हैं मेरी हिमल बढ़ गई और मैं सुखी भी
 फिर मैंने 8 किने और मैं बनाया और
 पहली बार पूरा मैं पुमान लगाई सभी
 को मेरे बिस्तर परम-ए और मुझे सुनाम
 भी मिला धीरे-धीरे हम पॉपुलर ~~होने~~ मिली
 फिर एक गुफा बनाया फिर कुछ दिन मरठी
 पर लोग मिला बहुत ~~मैने~~ ~~पैरशानी~~ आई

मेरा हाथ भी जाल गया था फिर हम 15 बहन
 मिली और हमने स्वयं सहायता समूह बनाया
 500 रु इकट्ठा किया कुछ घेरा हम बहनो को
 था और फिर प्रधानमंत्री रोजगार सृजन के
 तहत में पता चला फिर हमने 20 लक्षों का
 4 लाख मिला कुछ पैसा हम बहनो को था
 फिर हमने 20 लक्ष भूतिलगाई पूरा प्रगति मैदान
 सूरज लूके चढ़ीं गेट करना हमने उत्तराखंड जगह
 जगह भूजान हुए जगह विस्फोट बहुत अच्छे
 बनाया

सुनीता



Success Story 7

Sh. Pratap sharing his experience on beekeeping



Bee Keeping

In spite of major role of beekeeping in crop productivity improvement and income generation, this enterprise was not accepted as commercial source of income by the farmers in rural areas of Delhi. After establishment of KVK, Ujwa, Delhi in February 1995, it started a special drive for boosting beekeeping in rural areas.

KVK Intervention

In October 1996, KVK conducted its first vocational training in bee keeping for 22 trainees. The impact of this training was more encouraging because two farmers viz: Sh. Pratap Singh, Rawta and Sh. Raghuvir Singh, Dhansa started beekeeping. Sh. Pratap Singh is a farmer living in village Rawta, South West District of Delhi and is



Sh. Pratap at his beekeeping farm

Name	: Mr. Partap Singh
Address	: Sunita Madhumakkhi Plan, Village & P.O. Rawta, New Delhi - 110073
Qualification	: Senior Secondary
Age	: 65 years
Nodal Training Institute	: KVK, Ujwa, New Delhi
Name of Venture	: Sunita Madhumakkhi palan
Nature of Services	: Bee keeping
Annual turnover	: 12.40 lakh
No. of employment	: 5
Mobile	: 9210829294



Outcome & Impact

At present, he has 925 bee colonies and extracts about 185 quintals of honey and earning 12.40 lakh net income in a year. Besides honey production he also multiplies the bee colony by acquiring management techniques on queen rearing and colony multiplication. He has employed 5 people for smooth functioning of honey business from site selection to

one of the leading honey producers. He started bee keeping in 1997 by purchasing 80 bee colonies with initial investment of Rs. 1.4 lakhs and financial support from his family and friends. During season, he obtained 24 quintals of honey from 80 colonies and marketed the raw honey to whole sellers @ Rs. 32-35/- per kg and sold processed honey @ Rs. 60/kg in retail. Later on he faced the problem of management of bee colonies during the summer season particularly in the month of May- June due to scarcity of bee flora. He consulted the KVK expert and obtained the timely guidance on migration of bee hives. It helped him to save bee colonies by migrating to adjoining district of Haryana, UP and Punjab as per following schedule:

Months	Migration Destination	Bee flora
September - February	Different villages of Jhajjar district and in different villages of Delhi	Arhar, ber and Mustard
March - April	Different villages of Saharanpur district	Safeda
May - June	Different villages of Ambala and Gurgaon district	Sunflower and cucurbits
July - August	Different villages of Jind district	Cotton, cucurbits

marketing of honey. Now he has well furnished house in his village and able to provide better facility to family members for education and health from the income earned with bee keeping business. He is always keeping himself in contact with KVK and participates in training and workshop conducted at centre to learn about latest technology in bee keeping and also motivates other farmers and rural youths for bee keeping. On KVK advice he exhibits his honey and other bee keeping equipments at KVK stall put up during Pusa Krishi Vigyan Mela at New Delhi. With the regular hand holding of KVK, Sh. Pratap is continuously moving on path of success.

Recognitions/Awards Received by the Entrepreneur

- Every year Mr. Pratap participates in the Pusa Krishi Vigyan Mela exhibitions organized by Indian Agriculture Research Institute (IARI) and has once won the Best Stall award During 2004-05 and 2012-13.
- Mr. Pratap Singh has been facilitated for his work by honorable Chief Minister of Delhi during 1998-99 for commercial bee keeping.

सफलता की कहानी

मेरा नाम प्रताप सिंह है, मैं गाँव रास्ता नई दिल्ली का मूल निवासी हूँ। मेरे पास कुल 4 एकड़ खेती योग्य जमीन है जिस पर मैं चावल-गेहूँ की खेती करता हूँ। इस खेती से मुझे अच्छी आमदनी नहीं हो पा रही थी इस दौरान मैं कृषि विज्ञान केन्द्र, उज्जवा, दिल्ली के सम्पर्क में आया और उनके द्वारा दी गई सलाह के अनुसार मैंने कृषि विज्ञान केन्द्र, द्वारा आयोजित मधुमक्खी पालन विषय पर व्यावसायिक प्रशिक्षण में भाग लिया। प्रशिक्षण के पश्चात मैंने 1.40 लाख रुपये अपने करीबी लोगों से उधार लेकर 80 बकरी से मधुमक्खी पालन व्यवसाय की शुरुआत की, इन बकरी से कुल 24 किटल गहद प्राप्त हुआ जिसे मैंने प्रसंस्करण के बाद 60 रुपये प्रति किटली की दर से फुटकर में बेचा। गर्मी के मौसम में इनके प्रजनन व स्थानांतरण के लिए कृषि विज्ञान केन्द्र, उज्जवा से सम्पर्क किया। उन से सलाह लेने के बाद गर्मियों में इन मधुमक्खियों की पराग वनस्पतियों की उपलब्धता को मध्यनजर रखते हुए हिमाचल, उत्तरांचल में स्थानांतरित किया। वर्तमान में मेरे पास 925 मौन कालोनेया है और इन से मैं 12 लाख रुपये प्रति वर्ष शुद्ध आय के रूप में ले रहा हूँ। मैं मधुमक्खी व्यवसाय से न केवल गहद उत्पादन कर रहा हूँ, बल्कि रानी मक्खी का पालन कर मौन कालोनेयों को भी बढ़ा रहा हूँ। मैंने इस काम में 5 लोगों को रोजगार भी दिया है। हमी उज्जवा आर्थिक सर्वेजनी-भाली से जुड़ा रहे।

प्रताप सिंह



Success Story 8



Ram Kishore interacting with KVK scientist

Onion Cultivation

Name : Mr. Ramkishore Tyagi

Address : Village : Shikarpur,
New Delhi - 110073

Qualification : Senior Secondary

Age : 47 years

Nodal Training Institute : KVK, Ujwa,
New Delhi

Name of Venture : Onion storage & cereal production

Nature of Services : Bee keeping

Annual turnover : 6.0 lakhs

No. of employment : 5

Mobile : 9250549967

Onion is one of the important commercial vegetable crops grown in India. It is widely grown in many parts of the country mainly Maharashtra, Andhra Pradesh, Gujarat, Rajasthan, Punjab and Haryana. India is the second largest producer of onion next only to China. It is grown over 5.34 lakh hectares area with a harvest of about 76.37 lakh tones annually. Onion has been a crop of mass consumption and its demand remains constant year round in the market all over the country due to its usefulness as an essential ingredient in various culinary recipes and as raw in salad. Hence it is called as 'Queen of kitchen'. It has also been an important foreign exchange earning crop for years which accounts about 80% of total fresh vegetables export from India.

This crop is grown mainly in *rabi* season by small and marginal farmers. It is a cool season vegetable crop and is cultivated on large scale chiefly during *rabi* season in almost all parts of the country.



Traditional practice for storage of onion

Rabi onions have greater storability and can be available for long period for meeting the demand and regular supply in the market. Krishi Vigyan Kendra, New Delhi working under the aegis Indian Council of Agriculture Research (ICAR) and National Horticulture Research & Development Foundation (NHRDF) is popularizing improved Panipat type low cost onion structure (developed by NHRDF) for the use of small onion & marginal farmers through training and demonstration programmes.

KVK Intervention

It is about the experience of Shri Ram Kishore Tyagi farmer of village Shikarpur, Najafgarh block who gained economic mileage from the improved low cost storage structure for onion and become a source of inspiration to others farmers in the area. He is growing *rabi* onion since last 12 years. Due to lack of latest knowledge on onion storage and the traditional practices adopted at

his farm, he was not getting the good return in comparison to his investment. During the *Kisan Gosthi* organized by Krishi Vigyan Kendra, Delhi in his village about the activities of this Kendra since then he was in touch with KVK scientists for the solutions of the existing problems in his farm and allied enterprises. During interaction with KVK scientists he was guided to go for low cost Panipat type onion storage structures, in which onion can be stored up to 5-6 months which can fetch higher price during lean period September-October.

Outcome

He had grown *rabi* onion in 2 acres and constructed low cost Panipat type onion storage structure under close supervision of KVK scientist at his farm. During the period he achieved a yield of 300 q/ha onion and out of which he stored 150 quintal onion in constructed storage structure and another 150 quintal he sold as



Sorting & grading of onion before storage

fresh @ Rs. 650/q. After storage for 4-5 months he sold the onions @ Rs. 1250/q and the earning was twice than he sold the onion as fresh (shown in table below). This was a record income in his and nearby villages. This step was the turning point for him as well as for other farmers to fetch higher price from stored onion.

Impact

The year wise detail is given in table I, it is evident from the table that Sh. Ram Kishore was very much pleased with the monetary benefit from storage of onion, which convinced the fellow farmers to store the onion in low cost onion storage structure on their field as well as in the subsequent year.



Sh. Ramkishore at his full bloom onion crop

Economics of onion storage

Year	Area (acre)	Yield/acre (q/acre)	Fresh sale rate	Loss during storage (q)	Sale rate after storage
2014 - 15	2½	120 q/acre × 2½ = 300 q	150 q fresh sale × Rs. 650/q = Rs. 97,500/-	22.5 q (stored 150 q)	127.5 q × Rs. 1250/q = Rs. 1,59,375
2015 - 16	03	100 q/acre × 3 = 300 q	50 q fresh sale × Rs. 600/q = Rs. 30,100/-	37.5 q (stored 250 q)	212.5 q × Rs. 1200/q = Rs. 2,55,000
2016 - 17	04	110 q/acre × 4 = 440 q	120 q fresh sale × Rs. 550/q = Rs. 66,000	49.5 q (stored 330 q)	280.5 q × Rs. 950/q = Rs. 2,66,475/

About improved Panipat type low cost onion storage structure

NHRDF has developed model design of onion storage for two tier in Panipat and single tier in Nashik. This structure has adequate ventilation from all sides including bottom. Such should be constructed for reducing storage losses. KVK, Delhi is popularizing this structure in onion growing areas of Delhi.

The improved low cost structure can be easily constructed by farmer, the structure is generally made of bamboo or sarkanda nets and the roof is thatched made of sirki, which is covered on

top with jute cloth. The material of structure like bamboo/sirki, jute etc. is easily available in local market. The required size for storing 4 tons of onion is:

Length	-	20 feet
Width	-	4 feet
Side Height	-	5 feet
Height (centre)	-	6.5 feet
Height (from ground level)	-	30 cm

The low cost structure can be of different capacities having a life of 2-3 years with cost of Rs 7000 – Rs. 8000 for 4 tons capacity. The cost



Onion storage

of structure varies with locally available material and lab our.

Features of improved Panipat type low cost onion storage structure

- Construction of structure on a raised platform with bottom ventilation to prevent moisture and dampness by avoiding direct contact to bulbs with the soil.
- Increased centre height and more slope for better air circulation and preventing humid microclimate inside godown.
- Bottom ventilation provides free and faster air circulation to avoid formation of hot and humid pockets between the onion layers.
- Providing cubicles instead of continuous stack and sufficient space for ventilation for all sides
- Avoid direct sunlight or rainwater splashes falling on onion bulbs to reduce sun scald, decay fading of colour and quality deterioration
- Restriction on width of each stack to 60- 75 cm for cool humid weather, 75-90 cm for mild and humid weather and 90-120 cm for mild and dry weather conditions.
- Restriction of stacking height to 100 cm for small and multiplier onion and hot weather and 120 cm for mild weather and for big onion to avoid pressure bruising.
- One cubic meter area of store accommodates about 750 kg onions. Accordingly construction of godown for required capacity and construction of more units instead of single big structure and in zigzag manner when constructed in more rows.

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2m Bartz ca. 1000



Success Story 9



Button mushroom at farmers field



Mushroom Farming

Mushroom serves the organic food to the mankind to lead the healthy life and ensure the nutritional security. In the present situation, the commercial production of agricultural commodities triggers the mind of youths towards the setting up of micro level enterprises.

Mushroom production is one of the promising agriculture allied enterprises which create opportunity of self employment to the women and youths in rural and urban areas. The launch of mushroom commercial production unit is possible only with proper technical guidance and training along with the true interest and planned effort of unemployed and job searching recipients.

Mr. Rajesh Kumar, who hails from a village Wazirpur, North Delhi his life changed when he came in contact with KVK. Pooling his



KVK scientist visiting the mushroom unit of Mr. Rajesh

Name	: Mr. Rajesh Kumar
Address	: Village : Wazirpur, Delhi - 110052
Qualification	: Secondary school
Age	: 45 years
Nodal Training Institute	: KVK, Ujwa, New Delhi
Name of Venture	: Mushroom production
Nature of Services	: White button mushroom sale
Annual turnover	: 3.00 lakh
No. of employment	: 4-5
Mobile	: 9654745001



Mr. Rajesh working at his mushroom unit

resources, this man, who had never earlier thought of farm diversification, has become successful entrepreneur engaged in mushroom cultivation that is now paying huge dividends. He also feels delighted when other farmers in the area visit his home to see his endeavor. He started mushroom cultivation in 2013 and proved a boon for his family.

KVK Intervention

Mr. Rajesh Kumar was engaged in traditional farming with his father. They wanted extra income during lean months of crops season as they have 3 acre of land under paddy wheat rotation system



The low cost mushroom structure

they contacted KVK, Ujwa, Delhi. Scientists of KVK suggested him to adopt mushroom cultivation profession as their farm straw of wheat and paddy can be utilize in the preparation of compost and they have also old animal house to be used for mushroom growing. Mr. Rajesh received training from KVK during the year 2012-13, with the technical support and encouragement of KVK Scientist; he established a small mushroom production Unit during the year 2013 and initiated mushroom cultivation in the area of 62 sq mt.

Outcome

Mr. Rajesh prepared compost of his own wheat straw of the farm. In the year 2013-14 he constructed a shed for mushroom cultivation. Slowly he increased the capacity and presently he has a unit of 4,000 m² producing tones of mushroom. The marketing was done through direct marketing in local place. The mushroom is being sold @ Rs. 100/-kg. He is producing mushroom in a covering area of 4,000 m² has netted him Rs. 3 lakh to 3.25 lakh this year in one season. Earlier he was earning only Rs. 70,000 to 80,000 annually through traditional farming.

Impact

There is growth in his income level, but the most satisfactory part is that now he only requires precision with minimum effort to obtain the output which was found missing few years back. Mushroom Cultivation has been a hit in his life thus improving his standard of living. Now Mr. Rajesh is completely involved in mushroom cultivation throughout the year. This success may allow him to relish his entrepreneurship skills to go beyond subsistence and local trade.

Mr. Rajesh Kumar is of the view that one who can take moderate risk and has attitude of sincerity, devotion and commitment to work is bound to get success.

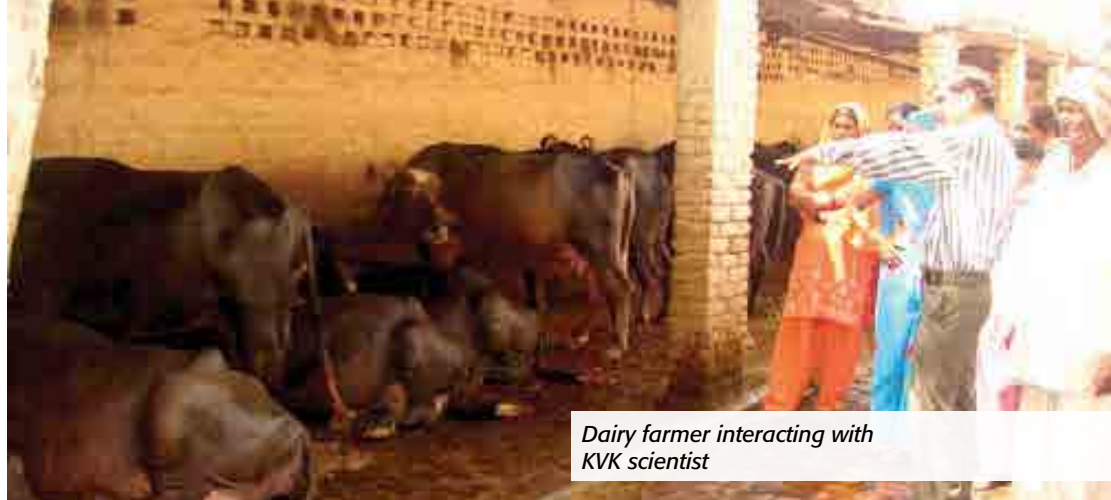
सफलता की कहानी

मेरा नाम राजेश कुमार है, मैं वजीरपुर गाँव उत्तरी दिल्ली का रहने वाला हूँ मैं और मेरे परिवार के अठारह पौषण के लिये परम्परागत एक एकड़ जमीन है जिसके मैं परम्परागत खेती करता हूँ पर इसके मुझे संतोषजनक आमदनी नहीं होती थी। तब मैं मेरा सम्पर्क कृषि विज्ञान केन्द्र उजवा में हुआ वहाँ के वैज्ञानिकों ने मुझे अच्छी आमदनी के लिये कृषि आधारित व्यवसायों के बारे में विस्तृत जानकारी दी वैज्ञानिकों द्वारा बताया गये सभी कृषि आधारित व्यवसायों में मैंने मुख्य उत्पादन के लिये दिलचस्पी हुई। वर्ष 2013 में मैंने कृषि विज्ञान केन्द्र से व्यावसायिक मुख्य उत्पादन का व्यवसाय 62 वर्ग मीटर भूखण्ड से शुरू किया। मैंने खुद के गेहूँ के अनाई से काश्मीर खास तैयार की फिर वॉरे-2 से इसका भूखण्ड 4000 वर्ग मीटर कर दिया अब मैं मे अपनी उपज को खुद से साज करके पैक करके स्थानीय बाजार में बेचता हूँ। अब मैं 4000 वर्ग मीटर भूखण्ड पर मुख्य उपज लगाना 3-3.25 लाख रुपये एक वर्ष में करता हूँ जबकि मैं अपनी परम्परागत खेती से वर्ष में केवल 7000-8000 रुपये की आमदनी करता था। अतः मैं अन्य किसान अग्रियों को बताते चलाता हूँ की आप परम्परागत खेती के साथ-2 कृषि आधारित (खेती) व्यवसाय जैसे, मुर्गीपालन, मुद्गमन्त्रीपालन, मुख्य उत्पादन, मछली उत्पादन आदि व्यवसायों को अपनाकर अधिक मुनाफा कमा सकते हैं।



Success Story 10

A Case of Large Area Adoption



Dairy farmer interacting with KVK scientist

Dairy Farming

Dairy farming is an important occupation in peri-urban area of Delhi. Demand for milk is increasing day by day owing to increase in population and disposable income of the individuals. Dairy farming is being adopted as a subsidiary occupation and not as a primary occupation. Since the dairy farming has proved to reduce the income inequality among the farmers and as an instrument for economic and social change for peri-urban masses, there is a need to look the dairy farming activity for viable proposition. Commercial aspect of livestock production is gaining importance due to changes in land utilization pattern, agriculture and socio-economic conditions. Delhi is situated nearby Haryana and demand of milk is more so KVK, Ujwa, Delhi motivated farmers to keep high yielding animals.



Demonstration by KVK Scientist on feed management during lean period

KVK Interventions

KVK, Ujwa, Delhi organized training programmes in dairy farming and motivated farmers to start the dairy farming for self employment and improve the existing management practices for better and sustainable production in line with the government's policy of diversification in agriculture. Farmers were trained from time to time in all aspect of dairying like ideal housing, breeding and management, hay and silage making, quality and clean milk production including prophylaxis and correct practices were demonstrated to them. The common field practices like feeding practices like (computation of ration, urea treated wheat straw), vaccination against important diseases, deworming methods were demonstrated to the dairy farmers. KVK conducted 10 vocational training for rural youth (376 participants) and 35 short duration courses (736 participants) during the years 2006-2014. KVK also arranged exposure visit for the trainees



Animal health camp organized by KVK

to the units of progressive dairy farmer/ Mother Dairy to motivate them.

Outcome

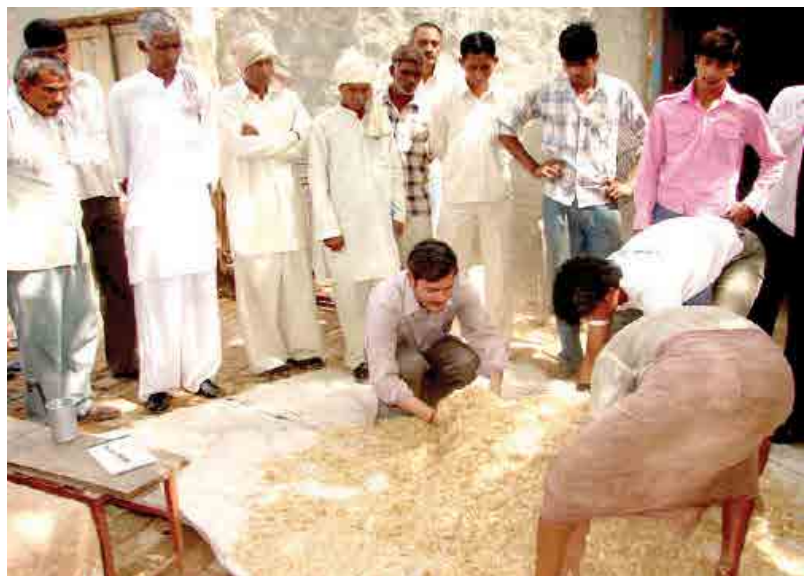
After getting the motivation through different trainings, farmers adopted dairy farming as an enterprise. Various technological



The vocational training on dairy farming organized by KVK

interventions like balanced feeding, Bypass protein treatment of cakes, Urea treatment of wheat straw, deworming, vaccination are now being practiced by the dairy farmers. About 54 percent farmers have started preparing the concentrate with available local resources after getting the appropriate knowledge through trainings, group discussion followed by method demonstration.

Presently about 15 small units (3-5 animals) and 6 large units (More than 15 animals) have been established, benefiting farmers Rs. 40000/small unit/ year and 1 lakh in large unit/ year after KVK interventions.



Demonstration by KVK Scientist on feed management during lean period



Farmers are guided on use of supplementary feeding to increase milk yield

Impact

Twenty percent farmers adopted dairy farming business in the peri-urban area and milk yield of animals is increased 18-20% after keeping improved breeds, use new technologies of dairy farming and employment generation for some other persons. Because they believe that power of producer, when matched with scientific farming and marketing skills, is the only way out for better rural development in this country.



Success Story 11



Farmers growing vegetables under close supervision of KVK scientists

Crop Diversification

The rural area of the NCT Delhi is divided into five Rural Development Blocks: Alipur (north), Kanjhawla (northwest), Najafgarh (southwest), Mehrauli (south) and Shahdara (east). Out of the total area of 147488 ha net sown area is 42084 ha. In Nazaagarh block the total cropped area is 20882 ha. Rice-wheat is a major crop rotation in this block. The intensive paddy-wheat rotation leads to serious repercussions in the form of resource depletion, soil degradation, nutrient deficiency, and fall in ground water table. The multiplication of insects/pests and diseases and intensive use of energy are some of the other consequences of paddy-wheat rotation faced by the agricultural sector in this block. Heavy doses of fertilizers and chemicals are further causing environmental degradation. In the wake of these constraints the need was felt to propagate crop diversification in the block. The cropping pattern which had become over specialized in the favour of paddy-



Farmer harvesting produce

A Case of Large Area Adoption



The vegetable replacement in the cereal growing area

wheat rotation required diversification. The role of fruits and vegetables in improving health and providing quality food security cannot be denied. The intake of vegetables in an average rural family of Nazafgarh block is far below (120 g per day) the Indian Council of Medical Research (ICMR) recommendations. These alarming findings are matter of concern in light of decreasing trend of growing vegetable crops for family consumption. Growing of vegetable crops at household level not only help to increase the quantity and quality of food intake, but also contribute towards decrease in the area under paddy wheat rotation beside reducing family expenditure. Nature and extent of crop diversification does not lead to any conflict with self sufficiency in food grain. In any case, diversification results in greater food security at household level.

Importance of vegetables in human diet has been recognized since long but more recently, their significance has grown manifold in Delhi because of depletion of underground water resources particularly for water thirsty crops like paddy, shrinking landholdings and massive youth unemployment are some other reasons for increased stress on cultivation of vegetable crops. Vegetable cultivation employs more number of persons and produce, more tonnage per unit of

area as compared to traditionally grown crops. It was estimated that labour use in vegetable cultivation is between 126-400 man - days / ha, as compared to 78-153 man days / ha in cereals, one hectare shift of cereal to vegetable crops in one season generates more than one year round full time employment.

The current agriculture recession in Delhi has prompted the search for profitable crops as an alternative to traditional crops such as paddy – wheat. Because of potential high return per acre, fresh vegetables obtained are often suggested as possible alternatives to raise the farm income, create more small farm opportunity, reduce the risk associated with monoculture and provide increase farm level opportunity.

Crop diversification has been perceived as the only alternative to end the problems arising due to paddy - wheat rotation.

Sarangpur, Dhansa, Ghumanhera, and Shikarpur villages in Nazafgarh block are generally following Paddy-wheat crop rotation. The underground water is suitable for growing vegetables in many parts of these villages. Due to uneven rainfall and drastic change in climate the productivity of



Farmer growing vegetables with cereal crop for higher return



Field visit of KVK scientists

rice and wheat in the area is falling continuously during last 3-4 years. Some progressive farmers of these villages came in contact with KVK and showed the interest in growing vegetable crops.

KVK Intervention

KVK scientists assessed cropping pattern in these villages, and it came out that cultivation of vegetables can be better option for higher income of farmers in comparison to traditionally grown cereals crop . The tomato, okra in spring-summer, brinjal and cauliflower in *rabi* can be good enterprises for higher income of the farmers. These vegetables can be grown easily and get higher yields than conventional crops. KVK conducted on farm trial to introduce the spring summer tomato and vocational training and demonstration on advance technology for growing of nursery vegetable crops. During the trainings the farmers were advised to grow vegetables during the suitable season for good

profit. Initially, Sh. Rajesh Kumar S/o Sh. Hans Ram resident of the village Sarangpur came forward for cultivation of tomato in spring season. Earlier he used to grow rice-wheat in his field. After taking trainings on growing of high value



On farm trail by KVK in vegetable crop in progress

vegetables from KVK, he planted spring summer season hybrid (F-2) tomato variety *Krishna* in 0.4 ha area. Spring summer season hybrid tomato was a new introduction in the area, he faced several difficulties but he did not lose confidence and kept taking remedial measures with timely interaction of KVK scientists. With his dogged perseverance and timely advice of KVK scientists he earned Rs. 85,000/-.

Outcome

Diversification with vegetable crops resulted in

better economic returns to Sh. Rajesh Kumar when compared with conventional crops. Seeing the profit in spring summer season tomato crop more farmers from villages Ghumenheda, Dhansa, Kanagnheri and Samaspur have come forward for diversification with other vegetable crops. This concept, resulting in greater profits to the growers, has been accepted in the area and more growers are joining hands to take up this new venture. The economics of conventional and diversified cropping system in the Najafgarh block of NCT Delhi is given below:

Economics (per ha.) of conventional and diversified cropping systems in Najafgarh block of NCT Delhi

Cropping pattern	Name of Farmer	Production (q/ha.)	Gross return (Rs/ha)	Gross cost (Rs/ha)	Net Return Rs/ha)	Total income per year (Rs/ha)
A. Conventional cropping systems						
Paddy-Wheat	-	40 45	88000 74250	31250 25000	56750 49250	106000
Bajra-Wheat	-	25 45	37500 74250	12500 25000	15000 49250	74250
B. Diversified cropping systems						
Cucurbits-Cauliflower-Tomato (spring summer)	Shri Ram Bhagat, Kanganheri	180 350	144000 227000	62500 80000	81500 147500	229000
Tomato (Kharif)-Brinjal	Shri Dayanand, Ghumanhera	320 380	192000 190000	80000 80000	112000 110000	222000
Tomato (Kharif)-Wheat	Shri Mahabir, Dhansa	350 50	210000 87500	80000 35000	130000 52500	182500
Paddy - Okra (Spring)	Shri Narender, Kanganheri	40 120	88000 200000	31250 85000	56750 115000	171750
Paddy-Cauliflower	Parveen, Shikarpur	40 250	88000 200000	31250 50000	56750 150000	206750

Impact

The activities taken up by the KVK in spreading know-how and imparting technology guidance helped in increasing the area under vegetable

crops in the Najafgarh block. Around 3000 ha of area have been successfully covered with vegetable crops in the Najafgarh block.





Yamuna Safed



Yamuna Safed-2



Yamuna Safed-3



Yamuna Safed-4



Yamuna Safed-5



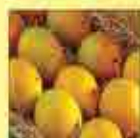
Yamuna Safed-6



Agrifound White



Agrifound Parvati



Pesticides Residue Analysis Laboratory

The NHRDF's Pesticides Residue Analysis Laboratory functional since 2003 has been recognized by APEDA and AGMARK, New Delhi, NRC Grapes, Pune and also accredited by NABL, New Delhi for testing of Pesticides Residues in grapes and other fruits, onions and other vegetables and all agricultural products covered under APEDA. The laboratory is equipped with Hi-Tech modern machines and state-of-art equipments, alongwith highly qualified and experienced professionals.

OUR SPECIALITY :-

Standard techniques coupled with accurate and precise

Sampling at field site by trained skill personnels

Quick and timely issue of test reports

NHRDF also produces and distributes high quality seed of onion, garlic, potato, okra, chilli, tomato, drumstick, cowpea and other export-oriented vegetables.



Contact :-

Pesticides Residue Analysis Laboratory

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