

FARMER'S FIRST NURSERY

Training report

Submitted to D.A.V. College, Abohar

In partial fulfillment of
requirements for the degree of

BACHELOR OF SCIENCE

IN

AGRICULTURE

(Elective: Agronomy)

By

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CERTIFICATE

This is to certify that the Training report after completing Training at “Farmer’s First Nursery SJIT, Abohar” submitted by Anmol (10119000447) to the Department of Agriculture, D.A.V College, Abohar in partial fulfillment of the requirement for the degree of Bachelor of Science in Agriculture.

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INTRODUCTION

The Farmer's First Nursery is a Four Star Nursery situated at Maujgarh, Abohar (Fazilka) accredited by the National horticulture Board of India. It is the largest supplier of virus free citrus (kinnow) plants in North India. Currently they are supplying virus free citrus plants to Punjab, Haryana, Rajasthan, Himachal Pradesh, Andhra Pradesh and Karnataka. It operates under SURENDER JAKHAR IFFCO TRUST, Abohar.

Farmer's First has been in the business of manufacturing pure and natural products since 2003. With a workforce of 99% rural women, ensuring utmost quality and hygiene, stays true to their core mission of empowering women and delivering world-class products. One of their marquee products is the tamarind candy which is served on Board Jet Airways. In fact, so popular is its presence in the market, that it is today available at leading supermarket chains such as Tesco's, Spencer's, Nuts n Spices and many more. Also their Tamarind Candy is exported to countries such as Canada and Saudi Arabia. Overall, the Farmers First Nursery is a top-grade nursery that provides high-quality products while also promoting rural women empowerment.

SURENDER JAKHAR IFFCO TRUST:

Since its establishment in 2012, the SJIT has been primarily focused on promoting horticultural development in the states of Punjab, Haryana and Rajasthan. With a particular emphasis on addressing the issues surrounding kinnow production, the trust conducts year-round seminars and practical demonstrations to help farmers to identify and manage deficiencies in plants, as well as to identify the nature of attacks from various pests. By providing timely information and techniques to help carry out essential agricultural

operations, the SJIT is helping to empower farmers and promote sustainable and profitable agriculture in the region.

Activities of the Trust:

- Annual Kissan Mela, Seminars and Kinnow competition.
- Soil and Leaf analysis.
- Recommendations to farmers based on analysis.
- Weekly survey for pest and disease surveillance.
- Visit of problematic orchards on request.
- SMS, WhatsApp and voice SMS services for farmers.
- Telephone service for farmers.
- Weather-related information for farmers.
- Biological control awareness programs.
- Awareness seminar on organic farming including citrus.

DAY 1 (March 1, 2023)

On the initial day of my training at the Farmer's First Nursery located in SJIT Abohar, I reached at 10:00 AM. Dr. M.K Kaul, the Project Director introduced himself and conducted a brief interview with me. Our discussion included a wide range of topics regarding agriculture, including the latest trends and advancements. Following our conversation, I had the opportunity to tour the nursery and observe a variety of plants and technologies in use. I concluded my day at 3:00 PM.

DAY 2 (March 2, 2023)

I reached at the premises at 10:00 AM on the second day of my training. The day started with an informative visit to the guava orchard, where I learned about leaf arrangement, flower positioning, nutrient uptake, nutrient deficiency and the effect of temperature on fruit set in guava. Then, I visited the Polyhouse Hi-tech nursery that had advanced foggers and drippers, where 13,000 plants were grown. I also had the opportunity to study the elite mother progeny of kinnow plants for bud extraction and the effect of citrus psylla and soothly mold on them. I was introduced to the scientific method of flush cutting of recently budded citrus plants. I departed from the farm at 3:00 PM.

DAY 3 (March 3, 2023)

I reached at the premises at 10:00 AM on the third day of my training. The day began with a visit to the Hi-tech nursery, where I learned about flush cutting of citrus plants. I had the opportunity to perform this task on two rows of citrus plants. Following this, I visited the kinnow orchard, where I selected and tagged a specific branch of kinnow. I counted the number of flowers of different stages on the branch and recorded a total of 222 flowers. Next, I counted the number of flowers on five date palm plants and recorded 4 flowers. I also

studied the male and female flowers of the date palm and collected male flower spathe for pollen extraction and pollination. I departed from the farm at 3:00 PM.

DAY 4 (March 4, 2023)

I reached at the Farmer's First Nursery at 10:00 AM on the fourth day of my training. I began my day by visiting the Hi-tech nursery where I learned about the importance of weeding and did it in four rows of plants. Afterward, I counted the number of flowers of kinnow of different stages and 255 flowers were recorded. I also counted the number of flowers of 5 date palm plants and 7 flowers were recorded. Then I collected stem cuttings of *Citrus jambhiri* (Rough lemon) and did budding practice. I inserted 10 buds on it and learned about the different parts of the stem during a lecture given by the project director. We also had a discussion about the proper positioning of bud insertion in stem cutting. I departed from the farm at 3:30 PM.

DAY 5 (March 5, 2023)

Sunday

DAY 6 (March 6, 2023)

I reached at the premises at 10:00 AM on the fifth day of my training and began by visiting the kinnow orchard to count the number of flowers of different stages. I recorded 243 flowers during my observation. Following this, I practiced budding on a mulberry stem cutting and inserted six buds onto it. Later, I carried out soil sampling in the field using an auger, collecting soil samples up to four feet with each one-foot sample in a different bag. I labeled each soil sample bag with the required information, such as the farmer's name, V.P.O, orchard age, murraba number, killa number, batch number and depth of the sample. The soil samples were then left open under sunlight to decrease their moisture content. I also counted

the number of flowers of five date palm plants, recording 11 flowers. Finally, I collected pollen grains from the male flower and stored them in the laboratory. I ended my day at the farm at 3:30 PM.

DAY 7 (March 7, 2023)

Holiday on the occasion of Holi.

DAY 8 (March 8, 2023)

Holiday on the occasion of Holi.

DAY 9 (March 9, 2023)

I reached at the premises at 9:30 AM on the sixth day of my training to start my day. I started with a practice session on the technique of bud insertion, during which I inserted 10 buds onto citrus stem cuttings. Later on, I visited the kinnow orchard to count the number of flowers in different stages of development. I recorded 247 flowers in total. Next, I counted the number of flowers on five date palm plants and a total of 19 flowers were recorded. In preparation for germinating sweet orange plant seeds, I collected well-pulverized soil in the seed germinating tray. After a productive day, I left the farm at 2:30 PM.

DAY 10 (March 10, 2023)

I reached at the farm at 10:00 AM on the seventh day of my training and started by counting the number of kinnow flowers in different stages where I recorded 222 flowers. Next, I practiced bud insertion on citrus stem cuttings and inserted a total of 8 buds. Later, I performed the pollination of female date palm flowers by inserting male spikes into the bunch of female flowers on the plant. I also studied the seeds of sweet orange plants. Additionally, I

counted the number of flowers on 5 date palm plants where I recorded 21 flowers. I left the farm at 3:30 PM.

DAY 11 (March 11, 2023)

I reached at the farm at 10:00 AM on the eighth day of my training and began the day by counting the number of kinnow flowers in different stages of development. I recorded a total of 228 flowers. Afterwards, I sowed 20 sweet orange seeds in a seed tray. Two rows were planted with seeds that still had their seed coat, while the other two rows were planted with seeds that had been removed of their seed coat. I then counted the number of flowers on 5 date palm plants and recorded a total of 22 flowers. I proceeded to pollinate 3 female date palm flowers using a male spike insertion. Later in the day, I attended a seminar where the concept of double fertilization was discussed. I left the farm at 4:00 PM.

DAY 12 (March 12, 2023)

Sunday

DAY 13 (March 13, 2023)

I reached at the farm at 10:00 AM on the ninth day of my training and began by counting 213 kinnow flowers at different stages. Next, I performed pollination on 5 female date palm plants by directly dusting pollen from a male flower spathe. I also practiced budding on rough lemon stem cuttings. During my rounds, I counted 24 flowers on 5 date palm plants. Later, I attended a seminar where we discussed growth and development, growth regulators, growth hormones and girdling. It was an informative session. I ended my day at the farm at 4:30 PM.

DAY 14 (March 14, 2023)

I reached at the farm at 10:00 AM on the tenth day of my training and began my work by extracting pollen grains from the male spathe of the date palm. I stored the pollen in a cool laboratory to keep it fresh. After that, I performed the first pollination of a female flower by inserting four male flower spikes into it. Next, I took a count of the kinnow flowers at different stages and recorded a total of 209 flowers. I also observed and counted the flowers on five date palm plants and found a total of 26 flowers. Later, I attended an informative seminar about agrochemical solutions, citrus psylla and its control and learned about the different types of agrochemicals and their usage. At the end of the day, I left the farm at 3:30 PM

DAY 15 (March 15, 2023)

I reached at the farm at 10:00 AM on the eleventh day of my training and began my work by counting the various stages of kinnow flowers resulting in a total count of 204. Next, I assisted with the pollination of 8 mature female date palm flowers and 4 new ones using male spathe dust and spike placement. During my time at the farm, I also created a herbarium of various plants and recorded 27 flowers of the date palm plants. My work was completed by 3:00 PM and I departed from the farm.

DAY 16 (March 16, 2023)

I reached at the orchard at 10:00 AM on twelfth day of my training and proceeded to count the number of kinnow flowers in different stages which is counted to 194. Next, I recorded the number of date palm flowers in 5 plants which totaled to 28. Later in the day, I attended a seminar that discussed the different orchard layouts and the optimal timing for various operations. I wrapped up my work and left the farm at 5:00 PM.

DAY 17 (March 17, 2023)

I reached at the premises at 10:00 AM on the thirteenth day of my training and began my work by counting the number of kinnow flowers at various stages. A total of 180 flowers were recorded. Next, I performed T-budding and I-budding on rough lemon stem cuttings. Later, I made a layout for a square-type orchard on a field measuring 35 square meters. The spacing between each plant was 6 meters by 3 meters and I marked the positions of 45 plants with pegs. In addition, I counted the number of flowers on five date palm plants, with a total of 29 flowers recorded. In the afternoon, I departed from the farm at 3:00 PM

DAY 18 (March 18, 2023)

I reached to the premises at 10:00 AM on fourteenth day of my training. I have done pollination of 4 new female flowers and repollination of 10 female flowers of date palm by opening and brushing pollen on them. Then, I have counted number of flowers of kinnow of different stages and 172 flowers were recorded. Number of flowers of 5 date palm plants was counted in which i have recorded 29 flowers. I departed from the farm at 3:00 PM.

DAY 19 (March 19, 2023)

Sunday

DAY 20 (March 20, 2023)

I reached at the premises at 10:00 AM on fifteenth day of my training and proceeded to remove 1 male flower spathe from a date palm using secateurs and a pruning saw. Afterward, I counted 157 flowers of kinnow of different stages and tallied 31 flowers of 5 date palm plants. Next, I performed pollination on 7 new female flowers and repollination on 9 female flowers of date palm by manually opening them and brushing pollen on them.

Unfortunately, the training for the day was cut short due to unexpected rain and I departed from the farm at 2:00 PM.

DAY 21 (March 21, 2023)

I reached at the premises at 10:00 AM on the sixteenth day of my training and started my day by counting the number of kinnow flowers of different stages. I recorded a total of 152 flowers. I then proceeded to perform pollination, where I pollinated 2 date palm flowers for the first time and repollinated 2 other flowers. Next, I counted the number of flowers of 5 date palm plants, which were 31 in total. After that, I attended an informative seminar on various agricultural concepts and technologies. Topics included in seminar are fertigation in kinnow, root activity of plants, the wet bulb theory of soil in drip irrigation, fertilizers used in drip irrigation, heading back of trees, inverted bottle neck abnormality in grafted plants, rejuvenation of senile orchards and the use of T trellis in orchards. My day came to an end at 4:00 PM and I departed from the farm.

DAY 22 (March 22, 2023)

Training of the day has been postponed to Sunday, 26 March 2023 by Director of the institution due to Administrative reasons.

DAY 23 (March 23, 2023)

I reached at the farm at 10:00 AM on the seventeenth day of my training and began my work. I performed first pollination on 17 date palm flowers and repollinated one flower. I also studied the process of veneer grafting in mangoes and growing cuttings from different plants. In addition, I counted 31 flowers of 5 date palm plants. Later, I attended a seminar where I learned about different grafting techniques, including veneer grafting, inarching,

splice grafting, air layering, mound layering and tip layering. At 3:30 PM, I departed from the farm.

DAY 24(March 24, 2023)

I reached at the premises at 10:00 AM on the eighteenth day of my training and proceeded to practice veneer grafting on a stem cutting of mango. Following that, I counted the number of flowers on 5 date palm plants and recorded a total of 32 flowers. Later, I gave a seminar on the various types of budding and grafting techniques, sharing my knowledge on the subject with those in attendance. The discussion then moved towards exploring new methods of plant propagation, where I had the opportunity to converse with the project director. At 3:00 PM, I departed from the farm,

DAY 25 (March 25, 2023)

I reached at the premises at at 10:00 AM on the nineteenth day of my training and started my work by tagging one female flower of date palm and a particular spike with it for daily fruit set data collection. The selected spike had 78 spikes and 42 fruits were counted in it. Next, I performed first pollination on three flowers and repollination on five flowers of date palm. I counted 32 flowers of five date palm plants. Later, I attended a seminar where I learned about plant growth regulators, harvesting stages and various varieties of date palm. I departed from the farm at 4:00 PM.

DAY 26 (March 26, 2023)

Sunday

DAY 27 (March 27, 2023)

I reached at the premises at 10:00 AM on the twentieth day of my training and immediately headed to the Manufacturing unit of Maujgarh Fresh Products Pvt. Ltd. It was an enlightening visit where I got to see a small scale candy making industry with 99% rural women workers. Later on, I performed the pollination of 2 flowers and repollination of 4 flowers of date palm. The selected date palm spike had a count of 38 fruit sets while the flowers of 5 date palm plants counted were 32. After that, I attended a seminar where we discussed the crop yield data and the various agricultural problems that farmers face. The seminar was an excellent opportunity for all students in my batch to share their ideas and insights. Finally, I left the farm at 5:30 PM.

DAY 28 (March 28, 2023)

I have reached Daulatpura village in Abohar at 8:00 AM on the twenty-first day of my training to participate in the Rural Agricultural Work Experience (RAWE) and conduct a survey on crop production and agricultural issues faced by farmers. Throughout the day, I interacted with 37 farmers, collected data on their crop production and listened to their concerns and problems related to agriculture. I concluded the survey and left the village at 6:15 PM.

DAY 29 (March 29, 2023)

I have reached Village Daulatpura (Abohar) at 08:00 AM on the twenty-second day of my training for the Rural Agricultural Work Experience (RAWE) and to conduct a survey on crop production and agricultural problems faced by the farmers. Throughout the day, I had the opportunity to interact with a total of 13 farmers, listen to their concerns and collect data

on their crop production. By the end of the survey, I had interacted with 50 farmers in total. I concluded my work for the day and left the village at 3:00 PM.

DAY 30 (March 30, 2023)

I reached at the farm at 8:00 AM on the twenty-third day of my training I conducted a flower count on 5 date palm plants, which resulted in a total of 32 flowers. Additionally, I counted 129 kinnow flowers at different stages. Later in the day, I analyzed the Survey Report on Crop Production and Agricultural Problems in Village Daulatpura (Abohar). I examined various aspects, such as net income, different crop and variety acreage, yield per acre and the major problems faced by farmers. I departed from the farm at 6:30 PM.

DAY 31 (March 31, 2023)

I reached at the premises at 11:00 AM on the twenty-fourth day of my training delayed by the rain. I participated in a seminar where we discussed the impact of hailstorms on kinnow fruit. During the seminar, I recorded the number of kinnow flowers in different stages and counted a total of 127 flowers. Additionally, I counted 32 flowers of 5 different date palm plants and performed the first pollination on 3 date palm flowers. I recorded a total of 30 fruits on the selected date palm spike. After completing my work, I left the farm at 4:00 PM.

DAY 32 (April 1, 2023)

I reached at the farm at 09:30 AM on the twenty-fifth day of my training to learn about computerized drip irrigation system in a kinnow orchard. I was impressed to see how the system works by automatically adjusting pH, fertigation and water supply as per the plant's requirement. During my visit, I also counted 112 flowers of kinnow at different stages

and 32 flowers of date palm. I also monitored the fruit set in the selected date palm spike, which was found to be 30. After finishing my tasks, I left the farm at 4:00 PM.

DAY 33 (April 2, 2023)

Sunday

DAY 34 (March 3, 2023)

I reached at the premises at 10:30 AM on the twenty-sixth day of my training, I submitted the herbarium and all the analyzed data reports of my month-long tasks. These included the Flowering Anthesis of Kinnow, number of flowers in date palm, weather forecasting data for the month and the survey report of farmers in Village Daulatpura. After submitting the reports, the project director discussed the outcomes of the reports in detail with me, providing valuable feedback and insights. It was a great opportunity for me to learn and grow in my field of study. As the day came to a close, I felt a sense of satisfaction in completing my training successfully. I departed from the farm at 4:00 PM