

PROJECT REPORT
ON
RURAL AGRICULTURE WORK EXPERIENCE (RAW) &
AGRO INDUSTRIAL ATTACHMENT (AIA)

Submitted to **RNB GLOBAL UNIVERSITY**

By

PANKAJ SUTHAR

Enrollment Number-

RNBGU201800089

Under the Guidance of

Dr. DIPALI GUPTA (Assoc. Professor)

Mr. AVINASH SHARMA (Asst. Professor)



RNB GLOBAL UNIVERSITY , BIKANER

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ACKNOWLEDGEMENT

I take this opportunity with my sincere thanks and deep gratitude to all the people who extended their whole hearted co-operation and helped me in completing this project successfully.

First of all I would like to thanks RAWE and AIA organization for creating an opportunity to undertake me. Special thank to department for all the help and guidance extended to me by them in every stage during training. The inspiring suggestion and timely guidance enabled me to perceive various aspects of the project in the new light.

In all I found a congenial work environment in **KVK BIKANER** and **SHRI CHAR BHUJA AGRO INDUSTRIES PVT. LTD.** and this completion of the project will mark a new beginning for me in the coming days.

I would like to express my special gratitude and thanks to Dr. Avinash Sharma, assistant prof. of RNB Global University, Bikaner for giving me such attention and support.

I would like to express my gratitude towards my parents for their kind co-operation and encouragement which help me in completion of this project.

CERTIFICATE OF ORIGINALITY

I hereby certify that I have completed the summer training in partial fulfillment of the requirements for the award of Bachelor of Science in Agriculture Hons. I have done my training at “**KVK BIKANER and SHRI CHAR BHUJA AGRO INDUSTRIES PVT.LTD.**” from 3-08-2021 to 4-12-2021.

I, hereby declare that the project entitled “**Project Report on RAWE and AIA**” written and submitted by me to the RNB Global University, Bikaner in partial fulfillment of the requirements for the award of Bachelor of Science in Agriculture Hons. Under the guidance of the Asst. Prof. Dr. Avinash Sharma is my original work and the conclusion drawn there in are based on the material collected by myself.

PANKAJ SUTHAR

B.Sc. (AGRICULTURE HONS.)

RNB GLOBAL UNIVERSITY

CERTIFICATE OF EXTERNAL GUIDE

RNB Global University, Bikaner, Rajasthan 334601
School of Agriculture,

CERTIFICATE

READY Component-I Rural Agricultural Work Experience (RAWEX)
READY Component-II Agro-Industrial Attachment (AIA)

This is certified that this is a bonafide record of practical work done and data collected by Mr/Kum/Smt Pankaj Suthar I.D.No, 201800089 in Rural Agricultural Work Experience Programme and Agro-Industrial Attachment Programme during VIIth semester of Final year B.Sc. (Hons.) Agriculture course during the 2021-22 academic year.

Dean
(Signature's with seal)

Name & Signature of the Course incharge's

Name	Signature
1) <u>Dr. Keshav Mehta</u>	<u>[Signature]</u>
2) <u>Dr. G.S. Meena</u>	<u>[Signature]</u>



SHRI CHAR BHUJA AGRO INDUSTRIES PVT.LTD.

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No CBS/BKN/Ind./2021/825

Date 05.12.2021

TO WHOM SO EVER IT MAY CONCERN

This is to be certify that **Mr.Pankaj Suthar** B.Sc(Hons)Ag.IV year student of **RNB Global University, Bikaner-334601** had undergone **03 weeks** industrial training experience from 15 November 2021 to 05 December 2021 under our supervision. The student was given extensive training in the activities Viz., Cleaning, Grading, Processing, Separating, Packing and Marketing of Mustard, Guar, Oat, Jawar, Gram, Moth, Cumin, Bajra etc from our industry. We would like to put on record the learning efforts shown by **Mr.Pankaj** in completion of assigned task during this period. He was respectful to him senior and colleagues throughout the training Period. The student has maintained minimum of 95% attendance during training. The overall work performance of the student was evaluated by our industry as outstanding.

We wish him best wishes for him future Academic Endeavours....

For Shri Char Bhuja Agro industries Pvt.Ltd.

Authorized Signatory



EXECUTIVE SUMMARY

The report gives us the basic idea about functioning at KVK BIKANER and SHRI CHAR BHUJA AGRO INDUSTRIES.PVT.LTD.

During 22 weeks program each and every aspect of an kind of technical failure or human error and its effect on functioning of RAWE and its impact .Then what are steps taken to overcome it within time period in order of smooth functioning of Agriculture management. With the help of this report one can get each steps taken.

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CHAPTER 1: RURAL AGRICULTURAL WORK EXPERIENCE (RAWE)

INTRODUCTION

RAWE

Rural agriculture work experience is a programme, under the recommendation of *RANDHAWA COMMITTEE*, is a program for imparting quality, practical and production oriented education for agricultural degree.

IMPORTANCE

- To prepare, us agricultural graduates for better carrier in future agro oriented sectors.
- Preparing agro graduates to face the challenges by acquiring knowledge's and skill through hands on experience.

OBJECTIVE

- Understanding rural life, socio economic situation, practical training, communication skills in TOT.
- Identification of agricultural problems in village.
- Conducting field visit, method demonstration and group discussion with farmers on need base agricultural topics.

ORIENTATION

I, PANKAJ SUTHAR, along with College of agriculture, Bikaner students were attached with Krishi Vigyan Kendra Bikaner-1 coordinate by DR. Keshav Mehra sir who introduced us about the institute, its division and units. He also gave us an overview of the ongoing project in the institute.



Figure1

About kvk Bikaner -1

Location – Bichwal (Bikaner).

Geographical location :- 28° 5'54" North and 73° 21' 30"East.

Area of the farm :-14 ha.

Source of the irrigation:-Tubewell and canal.



Figure 2

➤ **Mandate :**

- Promotion of agro technology for drought proofing covers, crop production, arid horticulture and moisture conservation.
- Promotion of arid horticulture for organized agriculture production/income .
- Improvement in animal production through feeding, management and animal health etc.
- Promotion of green fodder cultivation and organic farming in the area.
- To develop skill for farm women in agriculture, animal husbandry, horticulture and home science.Promotion of cultivation of seed spices, medicinal plants and preparation of value added products.
- Integrated pest management in rabi crops (wheat, gram and mustard) and kharif crops (Guar, moth bean and groundnut).
- To promote the value addition activities of locally available arid fruits and vegetable.
- Skill oriented trainings for extension functionaries in agriculture, animal husbandry, horticulture, home science and extension education.

Unit attachement learning details

Agronomical intervention

1. **Disc plough** :- The *disc plough* is designed to work in all types of soil for functions such as soil breaking, soil raising, soil turning and soil mixing.



Figure 3

2. **Harrow** :- A harrow is a farm tool. It is an implement for breaking up and smoothing out the surface of the soil. In this way it is different from a plow, which cuts deeper into the soil. A plow also lifts up the soil and tips it over, but a harrow works mostly by cutting into the soil and breaking it up.



Figure 4

3.Planker:-The planker or clod smasher is a homemade wooden implement which is useful for crushing clods.Leveling also helps in water distribution without logging during irrigation.



Figure 5

4.Seed drill :- A **seed drill** is a device that sows the seeds for crops by positioning them in the soil and burying them to a specific depthV.



5. Thresher:- Farm machine for separating wheat, peas, soybeans, and other small grain and seed crops from their chaff and straw.



Figure 6

6. Drone Technology :-Drones can help farmers to optimize the use of inputs (seed, fertilizers, water), to react more quickly to threats (weeds, pests, fungi), to save time crop scouting (validate treatment/actions taken), to improve variable-rate prescriptions in real time and estimate yield from a field.



Figure 7

Integrated farming system unit:- We got an opportunity to work on specific component of IFS model under the guidance of Res. Dr. Madan Lal Regear .

Integrated farming system is an interdependent ,inter-related production system based on few crops animals and related subsidiaries enterprises in such a way that maximizes the utilization of nutrients of each system and reducing external inputs.



Farming component:-

Pomegranate -Well drained, sandy loam to deep loamy or alluvial soils is suitable for cultivation. It is rated as salt hardy fruit plant.



Figure 9

➤ **Animals:-**

- The production of animals good from domesticated animals such as meat, dairy, wool, leather etc. Animal production has been increased worldwide in 40 years, accounts for 40% of gross value of agriculture.
- Crop-livestock integration through dairy based enterprises.
- Development of technologies for improving livestock, poultry and fish health and production.

Fish seed, feed and management of fishponds **Cow** :- Rathi breed :- 7 Calf :- 2



Figure 10

Milk production :- 40 lit per day

Average cattle dung production :- 10 kg per day.

Total dung production per day : $10 \times 7 = 70$ kg per day.
Total production of dung Per year = 70×365 day = 25.5 tonne (approx).

Use of cow dung for the production of vermicompost.
No. of vermicompost pit Four.

Goat :- Goats are mainly grown to produce milk and meat.

Sirohi breed total no. = 25

Female = 17 Male = 3 Kids =5



Figure 11

Tagging

All the cattle animals and goats are ear tagged in the unit. This ensures maintaining a proper count of their animals, their births and mortality. A daily record is also maintained for this purpose.

Vaccination and other Health care

- Timely vaccination against FMD (foot and mouth disease), ET and other diseases is given to dairy
Cattle and goats under proper supervision of animal doctors.
- Deworming of goats is done twice a year.
- Mineral mixture of gur+haldi+mustard oil+ warm water is provided to young kids and calves for providing immunity.

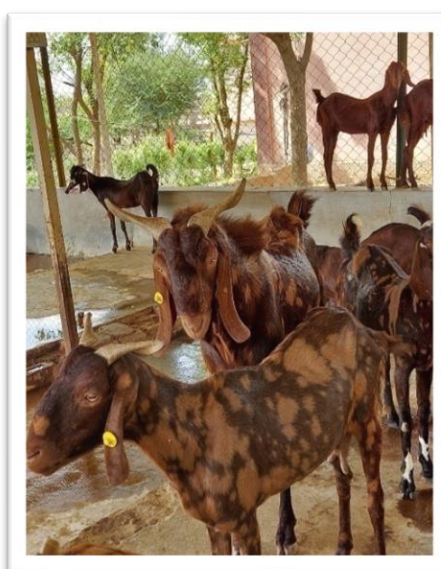


Figure 12

Feeding Requirement

CATTLE : Green fodder -20 to 25 kg, Dry
fodder -3.5 kg, concentrate- 3-4 kg (300-500
g/kg milk produced by the
animals.

GOAT : Green fodder – 2.5-3 kg(2.7 kg
observed under IFS assignment), dry

9

Poultry : Feed- paddy grain + maize soaked in adequate water

To facilitate swallowing .

Poultry:-Poultry, in animal husbandry, birds raised commercially or domestically for meat, eggs, and feathers .

In ifs unit

Kadaknath Breed Total =20

Male =2 Female =18





Figure 13 & 14

Transfer of Technology

Transfer of technology is defined as the transfer of result of basic and applied research to development n production and commercialization of new and improved products services .

Its of two types:

- **Vertical technology transfer** : When information is transferred from basic research to applied research to development and from development to production. Suh transfer occurs in both directions.
- **Horizontal tranfer of technology**: When technology used in one place , organization or context is transferred and used in another place or organization.

Transfer of Technology in agriculture

- Front line demonstration in farmers' field
- Field days and interactive farmers -scientists meetings or focus groups
- National level/State level training programme for development personnel, state officials and farmers and other agencies.
- Farmers Participation Action Research Programme (FPARP)
- Kisan Melas and exhibitions.
- Publication including extension pamphlets and technical bulletins.
- Programmes in public media like Radio talks, TV programme, Newspaper and other forums.

Farmers field visit:- Field visit with respected Dr. Keshav Mehra Sir

Waste to wealth:- Keeping the potential of waste management in consideration, the 'Waste to Wealth Mission' of the PMSTIAC aims to identify, develop and deploy technologies to treat waste to generate energy, recycle materials, and extract resources of value. The mission will also work to identify and support the development of new technologies that promise to create a clean and green environment. The mission will assist and augment the Swachh Bharat and Smart Cities projects by leveraging science, technology, and innovation to create circular economic models that are financially viable for waste management to streamline waste handling in the country.



Figure15

Emamectin benzoate uses :- Dr. Keshav Mehra sirawaring the farmers about the uses of this insecticides for the effective management of *Helicoverpaarmigera* (Hubner) Hardwick and *Spodoptera litura* (Fabricius) infesting groundnut.



Figure 16

- **Termite :-**
- **Eggs:** Dull, kidney shaped and hatches in 30-90 days

- **Nymphs:** Moults 8-9 times and are full grown in 6-12 months
- **Adult:** Creamy coloured tiny insects resembling ants with dark coloured head.

Control of termite :-

Cultural method:

- Flood irrigation at the time of planting because it stops termite attack due to excess moisture and the optimum moisture level will revive.
- Fill the gaps in the field to compensate the population

Physical method:

- Locate and destroy the termite colony.
- Collect and destroy the termite affected setts from the field.

Chemical method:

- Dip the setts in imidacloprid 70WS 0.1% or chlorpyrifos 20 EC 0.04% for 5min

Food processing:

- Food processing is the transformation of agricultural products into food or food from one form to another form.
- Secondary food processing turns the ingredients into food such as bread from flour.

Importance:

- It improves the taste, flavour, texture and colour
- It makes the food attractive
- It helps to increase the nutritious quality through value addition.

Marushakti- CHSc Bakery Unit is one of the top and best destinations for family and friends in the field of bakery, in Bikaner. It is Also known as bakery, bake, and pastry category and much more. Production of bajra biscuit on commercial level with high level of nutrition .

Benefit of bajra biscuit: High in fibre:- Digestion is sluggish during the rainy season, so it helps to stick to high-fibre foods like bajra.

Heart friendly:-

Bajra is rich in magnesium, which helps keep the heart healthy. It has potassium, which dilates blood vessels, allowing blood to flow more easily. This helps reduce

overall blood pressure. Bajra also has fibre that helps reduce LDL, or bad, cholesterol. Magnesium helps control the glucose receptors in the body and keep diabetes at bay.

Marushakti - CHSc Bakery Unit Products

- Soda bread
- Biscuit (bread)
- Crackers
- Tart
- Brownies Bread
- Bread roll
- Pizzas
- Pies
- Buns
- Flatbreads
- Bagels
- Doughnuts
- Pastries
- Cakes
- Croissants
- Cupcakes
- Cookies
- Scones
- Barmbrack
- Pumpkin bread
- Pita
- Sourdough
- Potato bread
- Cream Roll
- Ladi Pav
- Biscuits
- Pretzels
- Biscotti
- Cornbread



Figure 17&18

NURSERY UNIT

Definition- nursery, place where plants are grown for transplanting, for use as stock for budding and grafting, or for sale. Commercial nurseries produce and distribute woody and herbaceous plants, including ornamental trees, shrubs, and bulb crops.



Figure18,19 & 20

VERMICOMPOST UNIT

Definition- (**vermi-compost**) is the product of the decomposition process using various species of [worms](#), usually [red wigglers](#), [white worms](#), and other [earthworms](#), to create a mixture of decomposing vegetable or [food waste](#), bedding materials, and vermicast. This process is called vermicomposting.

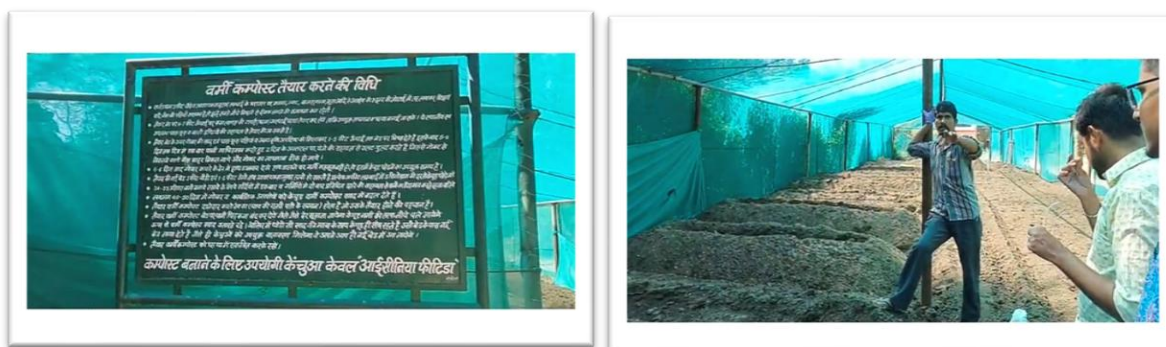


Figure 21, 22

Preparation time – 40-45 days

Process of vermicomposting:

Vermicomposting unit should be done in a cool, moist and shady site.

- Cow dung and chopped dried leafy materials are mixed in the proportion of 3: 1 and are kept for partial decomposition for 15 – 20 days.
- A layer of 15-20cm of chopped dried leaves/grasses should be kept as bedding material at the bottom of the bed.
- Beds of partially decomposed material of size 6x2x2 feet should be made.
- Each bed should contain 1.5-2.0sq of raw material.
- Red earthworm (1500-2000) should be released on the upper layer of bed.
- Water should be sprinkled with can immediately after the release of worms.
- Beds should be kept moist by sprinkling of water (daily) and by covering with gunny bags/polythene. → Bed should be turned once after 30 days for maintaining aeration and for proper decomposition.
- Compost gets ready in 45-50 days.
- The finished product is 3/4th of the raw materials used.

Benefit:-

- Improves soil aeration
- Biowastes conversion reduces waste flow to [landfills](#)
- Enhances germination, plant growth, and crop yield
- It helps in root and plant growth
- Enriches soil

- **VERMIWASH UNIT**

- **VERMIWASH**

- Vermiwash is a **liquid extract produced from vermicompost** in a medium where earthworms are richly populated. It comprises a massive decomposer bacteria count, mucus, vitamins, different bioavailable minerals, hormones,



Figure 23, 24 & 25

enzymes, different anti-microbial peptides, etc.

PROCESS OF VERMIWASH:

- Vermiwash may be collected from the vermicompost units as a byproduct liquid extract. Whereas other method (Kale, 1998) [16] of Vermiwash preparation is followed by taking One kg adult earthworms (approximately 1000 worms) of the same species (*E. euginiae*) were collected and without any mixing of the casts, they were released into a 500 ml of lukewarm distilled water (37 °C - 40 °C) and agitated for two minutes. Earthworms were taken out and again washed in another 500 ml at room temperature (+30 °C) and released back into the tanks. The agitation in lukewarm water made the earthworms to release sufficient quantities of mucus and body fluids. This is known as true vermiwash. Transferring into ordinary water was to wash the mucus sticking still on to their body surface and this also helped the earthworms to revive from the shock. Another method for the preparation of vermiwash, a plastic container of 15 to 20 liters capacity is required and the base of the container is fitted with tap to collect the watery worm extract. The container is filled with different successive layers. First base layer, medium sized bricks or stones up to a height of 10-15 cm filled. Above the base layer a layer of coarse sand (up to 6 inches) and fine sand (5 inches) are spread. Introduction of locally available earthworms (*Eisenia foetida*) mixing with fertile soil applied. After that, a layer of partially decomposed cow dung (20-25 cm) and organic residues of 40-45 cm were poured. All the layers in the container is moistened by sprinkling water over it. Container is sprinkled with approx 2 L water per day. After 16 to 20 days preparation of vermiwash in the unit begins. Everyday about 1-2 L of vermiwash will be collected. Fig 1: Preparation of vermiwash For nutrient supplement, vermiwash (1:10) i.e @ 1 litre is generally mixed with 7-10 litres of water and the solution is sprayed on leaves of the growing crop at the evening. However, to control various pest and diseases, 1 litre of vermiwash is thoroughly mixed with 1 litre of cow urine and 10 liters of water and is kept overnight before spraying.

Uses of vermiwash:

It **promotes better root growth and nutrient absorption**. It improves nutrient status of soil-both macro-nutrients and micro- nutrients. It can also be added to compost pits to hasten the degradation process. Vermiwash is the coelomic fluid extraction, which have enzymes, which stimulate the growth and yield of crops.

CUTTING OF BOUGAINVILLEA, ROSE AND NAG CHAMPA PLANT

CUTTING:-

A cutting is **a section of plant such as a modified stem, leaf, or root used for vegetative propagation** that forms either adventitious shoots, adventitious roots (stem and single node cuttings), or both (root and leaf cuttings).

i. BOUGAINVILLEA

Sn.-Bougainvillea glabra

Family:-Nyctaginaceae

Origin:-South America

PROCESS ARE FOLLOWED TO CUTTING THE BOUGAINVILLEA:-

1. Taking a Cutting from the Parent Plant:- **Cut a mature stem to a length of 6–8 inches (15–20 cm).** Use a pair of sharp pruning shears to snip the lower end of the stem at a 45 degree angle. Only take healthy cuttings that do not have signs of disease or infestation. Cutting the stem at an angle increases its



surface area, allowing it to take up more moisture and nutrients from the planting soil.

Figure 25

2. **Prune the leaves from the stem.** The stem is the only part of the bougainvillea that will take root successfully. Cut away all flowers, leaves, and small offshoots from the slender, woody shaft. Trim and discard any sections that are still green, as these are less likely to survive when planted.
3. **Dip the cut end in rooting hormone.** Wet the bottom of the stem and press it into a container of powdered rooting hormone. Coat the underside thoroughly, but avoid caking or clumping. To remove excess powder, tap the stem lightly with your fingertip.
4. Planting the Cutting:- **Fill a small container with a well-drained soil.** For best results, purchase a growing medium designed specifically for propagating from seeds and cuttings. You can also use a mixture of commercial potting soil, organic garden compost, and sand. Leave about ¼ inch (0.64 cm) at the top of the container to allow space for watering.

5. **Insert the cutting into the soil.** Sink the stem 1.5–2 inches (3.8–5.1 cm) below the surface of the soil to ensure that it's anchored firmly. If you're working with a denser soil mixture and you're worried about damaging the stem, it may help to first open up a narrow hole using a pencil or similar object.
6. **Water the newly planted cutting thoroughly.** Use enough water to moisten the surface of the soil without oversaturating it. After watering, allow the cutting to sit undisturbed. A healthy drink will encourage it to begin putting down new roots.
7. **Cover the potted cutting with a plastic bag.** The surrounding layer of plastic will create a miniature greenhouse effect, trapping in humidity. In just a few weeks, the abundance of moisture will help the plant begin growing on its own. Once it's covered, pick out a cool, shady spot inside your home away from direct heat or sunlight to store the cutting.

Look for the cutting to begin sprouting within 6-10 weeks. You'll know your bougainvillea cutting has taken root when small green leaves begin to form along the stem. In the meantime, avoid removing the bag or otherwise disturbing the plant.

8. Doing so could inhibit the rooting process.

ii. ROSEPLANT

Sn.-ROSA

Family:-ROSACEAE

Origin:-CENTRAL ASIA

PROCESS ARE FOLLOWED TO CUTTING THE ROSE PLANT:-

Take rose cuttings from strong, healthy plants during morning hours, when they're well hydrated. Follow these simple steps:

1. Choose a stem or stems between a withered bloom and the rose's woody base. One stem will make several cuttings.
2. Remove the bloom and stem tip. Cut at a 45-degree angle, right above the first set of leaves at the top and again above the last set of leaves at the stem's bottom. Put cut stems in water immediately.

3. Cut each stem into 6- to 8-inch lengths, so that each cutting has four “nodes” — that's where leaves emerge on stems.¹ Keep cuttings moist at all times.
4. Remove all the leaves *except* one set at the top of each cutting.¹ This helps cuttings root and helps you gauge their progress.
5. Pour a small amount of RootBoost™ rooting hormone into the dish. Pour only what you need, and discard the excess when you're done.
6. Moisten the cutting's bottom half, and dip it into the rooting hormone until covered.
7. Use a stick or pencil to make a planting hole 3 to 4 inches deep in your rooting bed or container. Make it big enough so you can insert the cutting without brushing off the hormone. Stick the cutting into the hole so its bottom half and at least two nodes are covered and then firm around the soil it.
8. Stick the cutting into the hole so its bottom half and at least two nodes are covered, and then firm around the soil it.



Figure:26&27

iii. **NAG CHAMPA PLANT**

Sn.-PLUMERIA PUDICA

Family:- APOCYNACEAE

Origin:- INDIA

PROCESS ARE FOLLOWED TO CUTTING THE NAG CHAMPA PLANT:-

9. Find a healthy branch on the mother plant. Select a branch with a brown or grayish surface, that's about 12 to 18" long, and firm along the entire length.
10. Stick the cutting into the hole so its bottom half and at least two nodes are recovered and then firm around the soil it.
11. Stick the cutting into the hole so its bottom half and at least two nodes are covered, and then firm around the soil it.

NAG CHAMPA PLANT

Sn.-PLUMERIA PUDICA

Family:- APOCYNACEAE

Origin:- INDIA

PROCESS ARE FOLLOWED TO CUTTING THE NAG CHAMPA PLANT:-

1. Find a healthy branch on the mother plant. Select a branch with a brown or grayish surface, that's about 12 to 18" long, and firm along the entire length. After the plant is acclimated, plant it into a permanent, year-round



sunny spot in your garden or in a very large container in a spot in full sun.

VILLAGE ATTACHEMENT

OBJECTIVE OF REPORT - Survey of nearby village through PRA/RRA/FGD.

Under this module of RAWE, different aspects of agricultural extension, especially field extension programmes, were studied by the students during their attachments to different villages, which included study on effectiveness of Krishi Mela in dissemination of information, agro-ecosystem analysis through participatory rural appraisal (PRA) techniques, constraints analysis, study of communication/information sources use pattern, role and importance of village level institutions, documentation during rural agricultural fair (Magh Mela) through photo features, strength-weakness-opportunity-threat (SWOT) analysis of farming in selected village, etc.

Effectiveness of Krishi Mela in dissemination of information was studied by the students. Different aspects of agriculture viz. soil health management, crop farming, horticultural crop production, livestock production, fish farming, financial and developmental schemes were studied by the students through interaction with the personnel of respective organizations participated in the fair and farmers visiting the fair.

Agro-ecosystem analysis was done by the students during their village attachment at Akasar village, which included analyses of space, time (time line, time trend, seasonality diagram, etc), flow (mobility map) and decision (wealth ranking, constraints analysis). Different methods followed were transect/ biodiversity walk, resource profile of the village, time line, seasonality diagram of crops, farming activity scheduling of crops, mobility diagram, venn diagram, etc. This exercise has helped the students to understand the rural agro-ecosystem for formulating suitable extension approach to improve the farming.

VILLAGE OVERVIEW :

Akasar

Block / Tehsil → Kolayat

District → Bikaner

State → Rajasthan

About Akasar

According to Census 2011 information the location code or village code of Akasar village is 069499. Akasar village is located in Kolayat Tehsil of Bikaner district in Rajasthan, India. It is situated 25km away from sub-district headquarter Kolayat and 25km away from district headquarter Bikaner. As per 2009 stats, Akasar village is also a gram panchayat.

The total geographical area of village is 4706 hectares. Akasar has a total population of 4,243 peoples. There are about 526 houses in Akasar village. As per 2019 stats, Akasar villages comes under Kolayat assembly & Bikaner parliamentary constituency. Bikaner is nearest town to Akasar which is approximately 25km away.



Figure 30

Akasar - Village Overview	
Village (Hindi) :	Akasar (अक्कासर)
Gram Panchayat :	Akasar
Block / Tehsil :	Kolayat
District :	Bikaner
State :	Rajasthan
Pincode :	334001
Area :	4706 hectares
Population :	4,243
Households :	526
Assembly Constituency :	Kolayat
Parliament Constituency :	Bikaner
Nearest Town :	Bikaner (25 km)

1. SOCIAL MAPPING

It involves the sketching houses and other social facilities and infrastructure (i.e temple, stores, roads, mills, schools, water pumps, irrigation and recreation facilities in a village. The village is divided in streets, is relatively. Main source of irrigation of Akasar village farmers is tubewells.

Mandi in town called Dhan mandi, there is APMC is there. Lowland is suitable for wheat cultivation. It helps to visualize and situate the location of household and other social facilities/infrastructure in a village.

Eg:

1. Temples-5
2. Schools-2
3. Pump based boring-50
4. Dairy -1
5. Anganwadis-1

6. Jeevikamahila mandal-1

2.RESOURCE MAPPING

A} Farm equipment's and machinery

1. Tractor-225
2. power tiller-15
3. Knapsack sprayer- 80
4. Thresher- 40-45
5. seed drill/country plough-50-60
6. Chaff cutter-60-70

B} Flour – 1 mill

C} Transportation

1. Cycles-60-70
2. Motorcycles-500-530
3. Scooters-50-60
4. Jeeps/cars-80-90
5. Trucks -10-12
6. Tractors-225
7. Lorries-25
8. JCB-5
9. Auto -15-20
10. Pick up van-50-55

3.TOPOGRAPHICAL, HYDROLOGICAL AND CONTOUR MAPPING

Akasar village come under agro climaticzone IC(Hyper arid partial irrigated zone)-

In Akasar village, we find hot summer, cool winter, unreliable rainfall and great variation in the temperature (20C in Jan. to 48.90C in June). The rainfall mostly restricted to rainy season. The monsoon normally comes in the first week of the July and recedes in the last week of September. The major Kharif crop of the zone are pearl millet, moth bean, cluster bean and sesame under rainfed conditions and groundnut, cotton under irrigated conditions. In Rabi, chickpea, mustard and wheat are major crops in this zone.

Major characteristic about Akasar village soil-

Canal irrigated light & medium soil-

Desert soils and sand dunes aeolian soil, loamy coarse in texture & calcareous

Rain Fed Area-

Fine sand to loam sand soil, sand dunes found in the area. Guar, Bajra, kharif pulses Gram, Taramira, Barley & Wheat crops.

Salt Affected Soil-

Sandy and alkaline soil. Saline ground water, not suitable for irrigation, Paddy wheat mustard, Toria and fodder crops.

Types of Houses-

1. Pucca house-almost 420
2. Thatched roof-45

Train facilities -Ialgarh-25km

Farm Implements- Bikaner

Fertilizers – from Bikaner

Food grains marketed under APMC, 9km away.

4. SEASONAL ACTIVITY

Variables such as Rainfall distribution, food availability, agricultural production, income Expenditure, health problem and others.

- 100 families engaged in cattle, 15-20 in buffalo, 4 in sheep/goat. 49
- Most of people are engaged in farming based livelihood such as groundnut wheat cropping system, livestock, with few people engaged in non farming (shop keeping), teaching and jobs.

5. Major intervention regarding farm and livestock

- Farmers mostly using own farm seeds but these some varieties are recommended, some farmer growing also it.
- The major Kharif crop of the zone are pearl millet, moth bean, cluster bean and sesame under rainfed conditions and groundnut, cotton under irrigated conditions.
- Cluster bean :- RGC -1017.
- Pearl millet :-MBC 2, PC 443, JBV 3, PC 383, ICMV 221, Raj 171.
- Sesame :- RT-46 , RT-54.
- Groundnut – HNg-69 , HNG- 10.
- In Rabi, chickpea, mustard and wheat are major crops in this zone.

- Wheat – DWB -187, WH1184.

6. Major strength and potential for agriculture

STRENGTH

- Unity among people of different caste and creed.
- Knowledge of ITK
- A mixture produced by using of neem leaves + butter milk + cow urine it takes almost two months to get its effectiveness and helpful in controlling all kind of pest and also work as nutrient for crop.
- **POTENTIAL**
- A) Improved technique of farming using integrated farming system.
- B) Setup of different agro-based industries,.
- C) Improving the socio economy of Rural in sponsored kvk facility.

7. PROBLEM IDENTIFICATION AND DIAGNOSIS

- Indian antelope invasion- netting and fencing around.
- Low irrigated area Irrigation is a very important ingredient of agriculture in this village.
- Lower rainfall though agriculture is the main occupation of Rajasthan but it is mostly dependent on the monsoon which is not only unpredictable and uncertain here but also has a short span.
- IDENTIFICATION AND CONTROL OF RED COTTON BUG.

The adult bug measures about 12-15 mm in length. The females are longer (15 mm) than the males (12 mm). It is blood red in colour except for eyes, scutellum, anal, antennae which are black coloured...



Figure 31

- **CONTROL-**
- Organic Control. Foliar sprays with diluted neem oil have shown to be

effective against this pest...

- Chemical Control. Always consider an integrated approach with preventive measures and biological treatments if available...



Figure 32

IDENTIFICATION OF PHYLLODY DISEASE OF SEASAME

All floral parts are transformed into green leafy structures followed by abundant vein clearing in different flower parts....

CONTROL-

- Remove and burn infected plants.
- Seed treatment with imidacloprid or carbosulfan protects the crop from all sucking pests including leaf hoppers for about a month.
- Spray dimethoate 30 EC @ 500 ml/ ha at 30, 40 and 60 days after sowing to control the leaf hopper.



Figure 33

Specific information about the farm

Farmer Family

Our host farmer, Dinesh nayak (age29), s/o Likhmaram nayak from Akasar living at Akasar . His main occupation is farming (livestock, Crops). He have a family member of 6 Consisting of wife, Leela devi (age27), daughter Kanta(age 2).Total number of family labour available for farm use is 2.



Figure 34

He has his landholdings of about 9 hectares as irrigated land. He use pump based irrigation system in his field.

General resource possesion:

Dwelling house-1 Dairy shed-2 Storage houses-2 to 3 Television-1
Refrigerator-1 Bicycle 1 Bike 2

Farm implements- 7to 8(Desi ploughs, M.B., Harrow, knapsack sprayer, chaff cutter, Tractors, Threshers).

Farm production system

Net cropped area is 9 hectare in which groundnut and cotton during kharif during rabi mustard and chick pea are main crop grown

Vegetable crop Radish and pea in 1 ha during rabi season .



Figure 35

CHAPTER-2

2.1 INTRODUCTION TO AIA

AGRO INDUSTRIAL ATTACHMENT PROGRAMME

Agricultural education is an important tool in ensuring increased agricultural productivity, sustainability and environmental and ecological security, profitability, job security and equity. It is a programme mainly aimed for preparing agricultural graduates for better career in agriculture. Providing agricultural graduates-oriented education to face the challenges by acquiring knowledge and skill through the hands-on experience. Learning by doing is the basic aim and theme of the programme.

DEFINATION - AIAP (Agricultural Industrial Attachment Programme) is a programme for imparting quality, practical and production oriented for agricultural degree.

Importance of AIAP Programme-

- Preparing agricultural graduates for better career in agriculture.
- Preparing agricultural graduates-oriented education to face the challenges by acquiring knowledge & skill though hands on experience.
- Developed Entrepreneurial Skills.

OBJECTIVES OF AIAP:-

- To expose the students to Industrial environment, which cannot be simulated in the university?
- To familiarize the students with various Materials, Machines, Processes, Products and their applications along with relevant aspects of shop management.
- To make the students understand the psychology of the workers, and approach to problems along with the practices followed at factory.
- To make the students understand the scope, functions and job responsibility-ties in various departments of an organization.

- Exposure to various aspects of entrepreneurship during the programme period.

ABOUT THE ORGANIZATION

SHRI CHARBHJUA AGRO INDUSTRIES PVT. LTD.

SHREE CHARBHUJA AGRO INDUSTRIES PRIVATE LIMITED having CIN U01114RJ2020PTC068344 is 1 years, 10 months & 9 days old Private company incorporated with MCA on 21st February, 2020. SHREE CHARBHUJA AGRO INDUSTRIES PRIVATE LIMITED is listed in the class of Private company and classified as Non-govt company. This company is registered at Registrar of Companies(ROC), RoC-Jaipur with an Authorized Share Capital of ₹ 1,00,000 and paid-up capitalis ₹ 1,00,000.

The company has 2 directors/key management personal SURENDRA KAMEDIYA, KARPA RAM CHOUDHARY. SHREE CHARBHUJA AGRO INDUSTRIES PVT LTD company registration number is 068344 and its Corporate Identification Number(CIN) provided from MCA is U01114RJ2020PTC068344.

The registered address of SHREE CHARBHUJA AGRO INDUSTRIES PRIVATE LIMITED is f 135, bichhwal industrial area (b i a),bichwal, Bikaner334001rajasthan - india.



Figure: 36

INDUSTRIAL LEARNING DETAILS

SEED PROCEESING

Seed processing: Seed processing or seed conditioning is the preparation of harvested seed for marketing to farmers. The processes involved include drying, threshing, precleaning cleaning, size grading, treating, quality testing, packaging and labelling.

Seed definition: the fertilized ripened ovule of a flowering plant containing an embryo and capable normally of germination to produce a new plant.

PRINCIPLES OF SEED PROCESSING

Within the seed lot, both the pure seeds and any undesirable materials may present major differences in physical properties:

- size (length, width, thickness)
- shape
- weight/density
- texture (rough, smooth, pointed)
- colour

PURPOSE OF SEED PROCESSING:

- To lower the cost of further processes likes storage including transport.
- This is achieved by reducing the bulk of the seed lot by cleaning debris and by removing empty or fractured seed (pre- cleaning)
 1. To increase the longevity of seeds; by drying seeds to safe moisture content and treating with protective chemicals
 2. To reduce the variability in vigour by invigorating the seeds and removing the low vigour seeds
 3. To improve the uniformity in seed shape or size by grading or by pelleting.

CLASSES OF SEED

1) Nuclear seed:

Nuclear seed is the hundred percent genetically pure seed with physical purity and produced by the original breeder/Institute /State Agriculture University (SAU) from basic nucleus seed stock. A pedigree certificate is issued by the producing breeder.

2) Breeder seed:

Breeder seed is produced from nucleus seed under the supervision of a qualified plant breeder in a research institute of Agricultural University. This provide for initial and recurring increase of foundation seed. Breeder seed is monitored by a joint inspection team of scientists and officials of certification agency and National Seed Corporation. The genetic purity of breeder seed crop should be maintained at 100 per cent.



Tag colour:Golden Yellow.

Figure:37

Breeder seed

3) Foundation seed

Foundation seed is the progeny of breeder seed and is produced by State Farm Corporation of India, National Seed Corporation, State seed Corporation under

technical control of qualified plant breeders or technical officers. Its production is supervised and approved by certification agency. The genetic purity of foundation seed should be maintained at 99.5 per cent.

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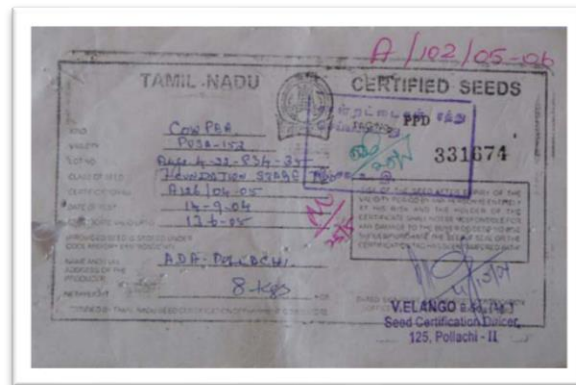
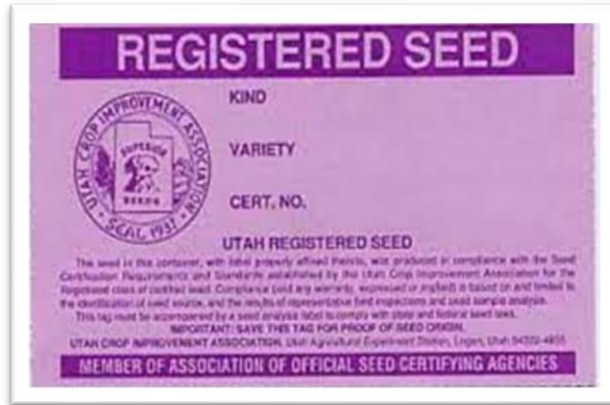


Figure:38

Foundation seed

4) Registered seed:

Registered seed shall be the progeny of foundation seed that is so handled as to maintain its genetic identity and purity according to standard specified for the particular crop being certified. A purple colour certificate is issued for this category of seed.



Tag colour: purple

Figure:39

Registered seed

5) Certified seed

Certified seed is the progeny of foundation seed and its production is supervised and approved by certification agency. The seed of this class is normally produced by the State and National Seeds Corporation and Private Seed companies on the farms of progressive growers. This is the commercial seed which is available to the farmers and its genetic purity should be 99 per cent.



Tag colour: azar blue

Figure:40

Certified seed

1.2.1.1 PROPERTIES OF GOOD SEED

Quality seed must meet certain quality standards in the laboratory:

- Moisture content (max. %)
- Physical purity (min. %)
- Germination capacity (min. %)
- Seed health (maximum incidence of diseases or insects)
- Genetic or varietal purity (min. %)

BENEFITS OF SEED PROCESSING

In addition to enhanced purity, health and germination, well-cleaned and good quality seeds have other benefits, all of which increase their market value: improved visual appearance, reduced seed rate, uniform emergence and crop stand, high yield and long shelf-life.

REQUIREMENT IN SEED PROCESSING

1. There should be complete separation.
2. There should be minimum seed loss.
3. Upgrading should be possible for any particular quality.
4. There should be have more efficiency.
5. It should have only minimum requirement.

TYPES OF MATERIALS REMOVED DURING SEED PROCESSING

1. Inert materials
2. Common weed seeds
3. Noxious weed seeds
4. Deteriorated seeds
5. Damaged seeds
6. Other crop seeds
7. Other variety seeds
8. Off-size seeds

1.2.1.2 TYPES OF MACHINES USED IN SEED PROCESSING

1. pre cleaner

2. Grader
3. Indented cylinder
4. Gravity separator
5. Elevator
6. Seed treatment machine
7. Wellmaintain Storage rooms
8. Exhaust fan
9. Weighing machine
10. Cleaning equipment of processing unit

1.2.1.3 OPERATIONS ARE FOLLOWED IN SEED PROCESSING

operations are based on characteristics of seed such as shape, size, weight, length, surface structure, colour and moisture content. Because each crop seed possesses individually seed structure. Therefore, sequence of operation will be applied proper equipments. However, It is also involved stages following as,

- **Drying**
- **Pre-cleaning**
- **Seed grading**
- **Indented cylinder**
- **Gravity separator**
- **Treating (Drying)**
- **Weighting**
- **Bagging**
- **Storage or Shipping**

- **Drying :**

Drying reduces the moisture content of the seed to the recommended levels for seed processing and storage. Drying seeds not only increases longevity in storage, but also prevents attack by pests and pathogens. Seed moisture content is key to the longevity of seed in storage. High moisture content:

- increases the respiration rate of seeds, raising the temperature within the seed lot to potentially fatal levels;
- causes growth of mould detrimental to the health of the seeds; and
- decrease of percentage of germination.

Methods of drying

- I. Physical drying (or) natural drying (or) traditional sun drying
- II. Mechanical (or) artificial drying

I. Physical drying / Natural drying / Traditional Sun drying

This is the common conventional method in which drying of the harvested crop is carried out in the field or threshing floor by the radiant energy of the sun. This does not involve any expenditure. To achieve uniform drying, the seed should be spread in thin layer. High moisture content seed with a moisture content of more than 17% should be dried first under shade / light to reduce the moisture content less than 17% and then dried under heavy sun i.e. noon drying. Sun dried seeds should not be allowed to remain open in the floor during night, since seed will absorb moisture from air. 2-4 days are needed to reduce the moisture content to 10-12%. Direct sunlight also can adversely affect seed germinability owing to high temperature and ultraviolet radiation, especially if the moisture content of the seed is high.



Figure:41

Traditional sun drying

Advantages:-

1. Easy and cheap
2. Does not require any expenditure or fuel.

Disadvantages:-

1. The rate of drying is slow
2. Loss due to attack by insects, birds and animals
3. Large floor area is required
4. Involves extra labour for collecting and exposing during the day
5. Sun drying cause sun checks or hot spots due to variation in temperature from time to time. This checks or spots induce high amount of breakage while processing
6. mechanical admixtures are possible
7. Dust, dirt and other foreign materials get admixed
8. High weather risks and damage by heavy wind and rains

II. MECHANICAL DRYING OR ARTIFICIAL DRYING

1) Forced air drying:

In forced air drying, natural air or air supplemented with heat is blown through a layer of seed until drying is completed. Generally ordinary seed godowns are provided with two types of ventilators for free movement of air circulation. In modern godowns, provisions are to be made for forcible circulation of air with the help of an electronic blower. The outside air which is comparatively dry is circulated in the godown and thereby the seed get dried up in this process. This is possible only in dry months. Two types of driers are used: batch and



continuous flow driers.

Figure:42

Forced air drying

2) Continuous flow driers In this type of drier:-

the seed moves horizontally or vertically through a stream of hot air and then into a cooling chamber. These driers are however difficult to clean when there is a change of cultivar. These driers can use air temperature higher than those of batch driers, because the seed is heated for a much shorter time.

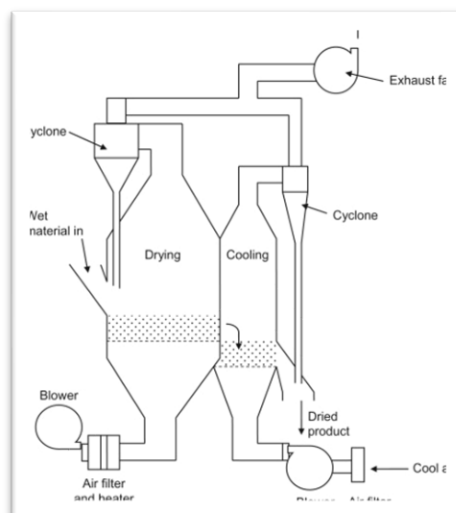


Figure:43

Continuous flow driers

Advantages over bin driers

1. Short drying period
2. Less damages or spoilage during wet weather
3. Drying is more uniform

Advantage of flow dryers:-

1. Quick method, timely and uniform drying is possible
2. Makes early harvest possible
3. It reduces the chances of losses due to over ripening and shattering of seed
4. Losses due to rodents and birds are prevented.
5. Less damage during processing operation.
6. Permits long time storage by preventing sun checks and other damages.

Disadvantages of flow dryers:-

1. Initial cost of drying the equipment is high
2. Fuel is expensive
3. It produces possible fire hazards
4. Considerable supervision is necessary.

○ PRE-CLEANING

Pre conditioning refers to **operations such as shelling, debearding, etc.**, that prepare seed lots for basic seed cleaning, and also to the removal of particles such as pieces of trash, stones, clods, etc., larger in size than desirable crop seed, from



threshed seed lots.

Figure:44

Pre-cleaning machine

- **FINE CLEANING (SEED GRADING)**

Fine cleaning – or grading–improves the quality of the cleaned seed. Grading aims to achieve the highest possible level of purity and normally targets specific contaminants. The cleaned seed may also be separated by quality (e.g.size, shape, weight/density and colour).



Figure:45

Seed grader machine

- **INDENTED CYLINDER**

Indented cylinder. This helps to separate seeds according to the length. The equipment consists of a slightly inclined horizontal rotating cylinder and a movable separating trough. The inside surface has small closely spaced hemispherical



indentations.

Figure:46

Indented cylinder

- **SPECIFIC GRAVITY SEPARATION**

This method makes use of a combination of weight and surface characteristics of the seed to be separated. The principle of floatation is employed here. A mixture of seeds is fed onto the lower end of a sloping perforated table. Air is forced up through the porous deck surface and the bed of seeds by a fan, which stratifies the seeds in layers according to density with the lightest seeds and particles of inert matter at the top and the heaviest at the bottom. An oscillating movement of the table causes the seeds to move at different rates across the deck. The lightest seeds float down under gravity and are discharged at the lower end, while the heaviest ones are kicked up the slope by contact with the oscillating deck and are discharged at the



upper end. This machine separates seeds of the same density but of different size and seeds of the same size but of different densities.

Figure:47



Specific gravity separation machine

○ TREATMENT

All possible contaminants have been removed and the seed has been graded; it is now ready for bagging. First, however, consider whether chemical treatment (fungicide or insecticide) is required. Only treat seed if absolutely necessary. Use only properly labelled chemicals, specifically registered for seed treatment. Do not use chemical products not designed for seed treatment. Appropriate treatments stick properly to the seed and have a distinct colour to indicate that the seed has been chemically treated.

Crop protection products come in the form of:

- powders - applied directly to seed (rarely used due to the risk of the operator inhaling the powder); and
- wettable powder/grains or dilutable liquids – mixed with water and applied to seed with specially designed treating machines.

Benefits of seed treatment:-

- Protection - of seed - against insect attack during storage.
- Protection - of seeds and seedlings - against attack by soil insects; by soil organisms causing disease; and by other pests (e.g. birds and rodents).
- Control of the spread of plant diseases.
- Improved germination and crop yields

Precautions in seed treatment:-

Although there are significant potential benefits, seed treatment must only be used when necessary. Careful handling is fundamental, because the chemicals may be dangerous to human health. Seed treatment is basically an agronomic issue: faced with a serious pest or disease threat, a simple seed treatment has a potentially dramatic effect on seedling establishment; this may be a good reason for farmers to buy the seed. On the other hand, the threat from insects and diseases may not be

serious enough to justify the use of chemicals from both a health and an economic point of view. Use of untreated seed may often be the better option.

Method of chemical application:-

- Dusts - dry powder chemicals mechanically applied to the seed. Seed coverage is not uniform and the chemical tends to drift or slide off the seed. Dusts involve the highest level of danger in the processing plant; they float in the air and operators must wear proper masks to avoid inhalation.
- Liquids - true solutions of the chemical dissolved in water. Seed coverage is uniform.
- Slurries - mixtures of water and wettable powders or grains. They are purchased already mixed or can be prepared just before application. Seed coverage is thorough and uniform.



Figure:48

Seed Treatment machine

○ **WEIGHING SCALE**

Weighing must be accurate, as there is a legal responsibility for the weight stated on the label when seed is marketed. Seed or other material is weighed at reception,

during processing and at bagging. Weighing scales may be electronic or manual, digital or analogue (dial). popular model is a moveable scale comprising a platform on which the bag is placed, a supporting bar for the bag and a graduated beam with a suspension hook for weights. The platform rests on four castor wheels. A variation of the same scale has a dial instead of the graduated beam.

○ **PACKAGING**

Package the cleaned seed in a suitable material (e.g. polypropylene, paper or jute). Packages must be per unit weight (kg); alternatively, pack the seed in quantities appropriate for sowing a specific area of land to help farmers decide how much seed to purchase. Select storage and sales packaging from a range of standard sizes and types.

Same-size and same-type containers must have the same weight to simplify the inventory control of seeds in storage.

Packaging material are 3 type-

- Moisture-vapour resistance eg, polythene
- Moisture-vapour permeable eg, cloth, paper bags,



- Moisture-vapour proof eg, tin cans

Figure:49

Seed Packing bag

○ **SEED LABELLING**

All seed bags must carry printed information about :

- crop
- variety
- class of seed
- name / address of producer
- physical purity %
- genetic purity %
- moisture %
- germination % Figure:50
- date of germination seed label on the bag
- date of test
- net content
- **SEED STORAGE**



seed storage are the preservation of seeds under controlled environmental conditions which will prolong the viability of the seed for long period.

There are 2 types of storage

- short term storage
- long term storage

I. **short term storage:**

A range of materials are adopted for short-term seed storage, most of them porous. Inspect regularly for pest outbreaks or other forms of damage. Each material has advantages and disadvantages:

- Jute bags are resistant, can be re-used many times and can be stacked high without slipping. They provide limited protection against moisture and pests.
- Cotton bags can be re-used, depending on the quality of the fabric, but they are not as strong or as tear-resistant as jute. They provide limited protection against moisture and pests.
- Plastic bags (made from woven material) are resistant, but they tend to slip when piled high and are harder to close securely once opened. They provide limited protection against moisture and pests.

- Paper (multi-layered) bags are suitable for packaging larger quantities of seed. They are cost effective for storing small lots of seed, but are generally limited in strength and tend to burst when piled high, accidentally dropped or used repeatedly. Indeed, they should be double or triple layered to prevent bursting. They provide only limited protection against moisture.
- Cardboard boxes and cans are re-usable and good for stacking; they provide good protection against mechanical damage and infestation by seed storage insects, but they are relatively expensive.
- Polyethylene zip lock bags may be used provided the seed has been adequately dried. Indeed, plastics and thin films are not effective moisture barriers (albeit more effective than paper). They are relatively expensive.

II. long term storage

Sealed metal and glass containers are the most commonly used containers for long-term storage. It is imperative, in all cases, that containers are fitted with a rubber gasketed seal in good condition. They can protect seeds against humidity, insects, rodents and mechanical damage. Do not use plastic for longterm storage.

- For large quantities, metal cans fitted with rubber gasketed lids and pressure rings are ideal for storing big seeds (e.g. peas, beans and corn). Large njars with gasketed seals are also excellent; although breakable, glass allows the contents to be easily inspected for insect damage.
- For small quantities, small sealed jars are ideal.

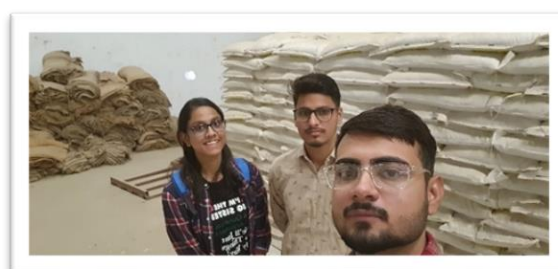


Figure:51
Seed Storage house

○ **STACKING PROCESSED SEED**

Once sewn, take the bags to the finished goods store. Place them on wooden pallets and arrange in an orderly pattern to facilitate counting and inspection. Do not exceed the maximum recommended stack size in terms of number of bags and height of the stack. A stack may sometimes constitute one seed lot. Leave ample space around the stack, between stacks and between the stack and the wall. Small stacks are practical for inspection, counting and fumigation. Label the stack.

Keep the store dry, clean and tidy at all times. Carry out regular inspections for signs of infestation; fumigate with recommended products as necessary. There may be national regulations imposing a maximum weight for seed bags; check with the relevant authorities - typically in the ministry of work, health or agriculture. In any case, it is unlikely that an enterprise would pack seed in bags in excess of a liftable



weight (e.g. 50 kg).



Figure:52
Stacking processed seed

2.3.1.6 AIA MANUAL REPORT

CHAPTER-3

INTRODUCTION TO IN-PLANT CLINIC

PLANT CLINIC

Plant clinics are meeting places (mostly operating from local markets, community centres and cooperatives) where farmers who are struggling with any plant health problem can take samples of their ailing crops to trained plant health extension officers (referred to as plant doctors) for free diagnosis.

The main aim of setting up such clinics is **to diagnose pests and diseases in any crop and render accurate knowledge to the farming community**. Basically it is a community-driven model, conducted in a common location, accessible to all categories of farmers in a village.

3.2 OBJECTIVE

1. Reduce crop loss due to insect and disease
2. Minimizing the indiscriminate use of agrochemical
3. Dissemination of appropriate plant protection technology
4. Provide efficient plant health services to the resource poor to commercial growers
5. Provide services on soil health related problems.

3.3 PLANT TRAINING LEARNING DETAILS

1. Commonly used and purchased fertilizers:

- DAP
- MOP
- UREA



Figure:53

Dap

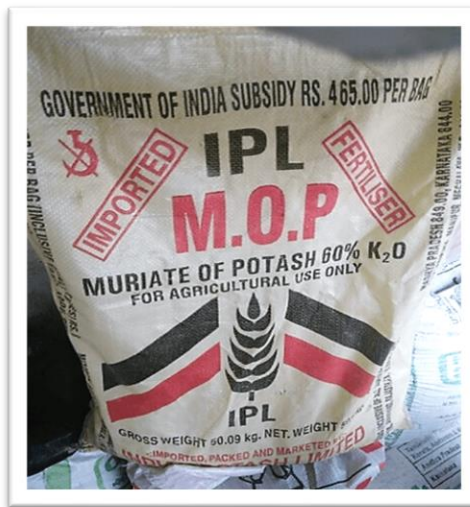


Figure:54



Mop

Figure:55

Urea

2. Commonly used and purchased herbicides:

- **2,4-D** – broad leaf weed control. Forexample bathua.
Dose- 5-6 liter/ Bigha
- **Glyphosate** – control broad leaf weeds and grasses.

- **pogo (metsulfuron)**– control hardly leaf weeds especially congress grass(Gujarat grass) , Jungli palak.
- **Gramoxone (paraquat salt)** – control of most fibrous rooted grasses and annual broad leaf weed.
Dose: 1 liter in 5-6 bigha.



Figure:56



Figure:57



2,4-D

Figure:58

Metsulfuron Methyl



Glyphosate

Figure:59

Gramoxone

3. In groundnut for termite used insecticides are:

- Chlorpyrifos: 20 EC – 300 ml/ liter.

50 EC – 200ml/ liter



Figure:60

Chlorpyrifos



→ Groundnut seed are treated with carbendazim 2-2.5 gm/ kg.

Figure:61

Carbendazim

→ For white gurb mostly used insecticides is – carbofuran 3G – 3-4 kg/ bigha.

4. For jassid, Aphid control in guar commonly used and purchased insecticides by farmers are:



- Thiomethoxam (Actara) – 35% or 70% spray.

Figure:62

Thiomethoxam

- Roger – 3 ml/ liter.



Figure:63

Roger

→ Black leaf spot disease in guar control by coc insecticide also known as blue copper. Dose: 1gm / liter.

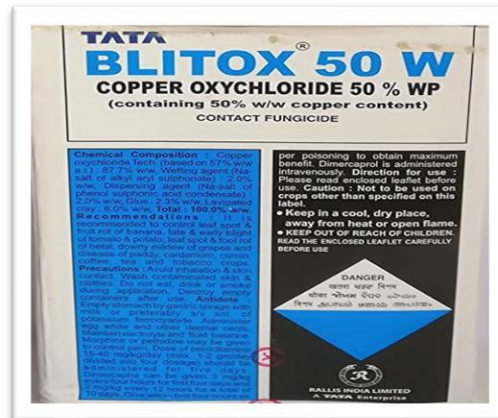


Figure:64

Copper oxychloride

5. Do any farmer purchase Nano UREA?

No, because have little knowledge about this product.

6. Do farmers purchase any organic fertilizers?

No, mostly prefer buying chemical fertilizers and some purchase micro-food organic fertilizer. Micro-food dose: 1liter for 3 bigha.

CONCLUSION

It has been an amazing experience during our RAWE, AIA and plant clinic session ((2021-22). We came to experience different aspects of real facts in agriculture which we learned in books. It gives immense pleasure while giving solution to a problem dealing with the farmer. Identified various productive resources and improve communication skills by interaction with the host farmer. It offers an opportunity to gain experience of rural area, rural people and their social structure in making extension work successfully. It includes team spirit working in group, time management, and logical approach to problems. And in industrial attachment, we learned about different machines which is used in the seed processing unit. And we also learned about how the seed industry work. In-plant clinic we know about the different type of fertilizer, weedicide, herbicide, insecticide and micro-nutrient. And we also listened to the problems of that farmer.

From orientation till submission of report, every moment in RAWE, AIA and plant clinic has been exciting, exploring, adventurous, and unforgettable. Special thanks to the respected scientist of rawe and guide of industrial attachment and owner of plant clinic who helped us to gain knowledge and experience.

WEEKLY PROGRESS REPORT

RAWE AND AIA

CHAPTER – I

RURAL AGRICULTURAL WORK EXPERIENCE(RAWE)

PERFORMA FOR DAILY DIARY OF STUDENT

(To be maintained by the student in ruled notebook)

1. Name OfTheStudent : PANKAJ SUTHAR
2. EnrolmentNo. : Rnbgu201800089
3. Name OfTheCollege : Rnb Global University, Bikaner
4. Name & Address Of TheContactFarmer : -
5. Rawe In-Charge And Guide : Dr .M.L Reager
6. Research Station/Kvk : Krishi Vigyan Kendra, Bikaner
7. AbstractOfWork : Learning Field Work AtKvk, Bikaner

WEEKLY REPORT- (WEEK -1)

Work days & Date	Abstract of work done	Signature & Designation of Visitors / Contact Farmer
Monday	-	-
Tuesday [3-08-2021]	Joining and Reporting at KVK, Bikaner	
Wednesday [4-08-2021]	<u>Horticulture-</u>	

	Pruning of Pomegranate Plant	
Thursday [5-08-2021]	<u>Horticulture-</u> Pruning of Pomegranate Plant	
Friday [6-08-2021]	<u>Agronomy-</u> Learned to make Field Layout using 3-4-5 Pythagorean Theorem Method	
Saturday [7-08-2021]	<u>Agronomy-</u> <ul style="list-style-type: none"> • Done Transplanting of Pearl millet • Removed Weeds <u>CYNODONDACTYLON</u> • Done seeds sowing of Cucurbits such as Ridged gourd (Turai) , Long Melon(Kakdi), and Watermelon. Using Khera Technique 	
Sunday	-	-

WEEKLY REPORT-(WEEK -2)

Work days & Date	Abstract of work done	Signature & Designation of Visitors / Contact Farmer
Monday [9-08-2021]	Holiday	-
Tuesday [10-08-2021]	<u>Agronomy-</u> <u>Land Preparation-</u> <ul style="list-style-type: none"> • Provided Plot area 6× 6 m. • Made bunds on borders of our plot • Did Ploughing of land using Hand harrow • Removed the weeds from the allotted plot 	

Wednesday [11-09-2021]	<u>Agronomy-</u> Allotted Plot area was properly leveled with the Hand Leveller.	
Thursday [12-08-2021]	<u>Agronomy-</u> <ul style="list-style-type: none"> • Fertilizers (Urea and DAP) was added on the allotted plot area. • Proper mixing of fertilizer into the soil, then leveling was done, 15 cm lines were made at equal distance on plot • Seed Sowing of 'OKRA in 5 cm depth.' i.e., Bhendi was done. 	
Friday [13-08-2021]	Holiday	-
Saturday[14-08-2021]	Holiday	-
Sunday	-	-

WEEKLY REPORT-(WEEK -3)

Work days & date	Abstract of work done	Signature & designation of visitors / contact farmer
Monday [16-08-2021]	<u>agronomy-</u> <ul style="list-style-type: none"> • thinning in 'moth bean' • we removed excess plants growing at one place leaving healthy seedling for proper growth and development. 	

Tuesday [17-08-2021]	No work (because of transfer of our guide “dr. Madan lalreagar sir” to lunkaransar)	
<u>Raksha bandhan holiday begins from (18-08-2021 to 24-08-2021)</u>		
Wednesday [18-08-2021]	Holiday	
Thursday [19-08-2021]	Holiday	
Friday [20-08-2021]	Holiday	
Saturday[21-08-2021]	Holiday	
Sunday		

Performa For Daily Diary of Student

(To Be Maintained by The Student In Ruled Notebook)

1. Name OftheStudent : PANKAJ SUTHAR
2. EnrolmentNo. : Rnbg201800089
3. Name OftheCollege : Rnb Global University, Bikaner
4. Name & Address of TheContactFarmer : -
5. Rawe In-Charge And guide. : Dr. Keshav Mehra
6. Research Station/Kvk : Krishi Vigyan Kendra, Bikaner
7. AbstractOfWork : Learning Field Work AtKvk, Bikaner

WEEKLY REPORT-(Week -4)

Work Days & Date	Abstract Of Work Done	Signature & Designati on
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		Of Visitors / Contact Farmer
Monday [23-08-2021]	Holiday	-
Tuesday [24-08-2021]	Holiday	-
Wednesday [25-09-2021]	<ul style="list-style-type: none"> • Reporting At KVK, Bikaner • Training Under New Guide Dr. Keshav Mehra Sir • General Introductory Class 	
Thursday [26-08-2021]	<ul style="list-style-type: none"> • Celebrated 'Food And Nutrition Day For Farmers <u>(General Discussion Was Made)</u> • Extempore Organized By Sir. • <u>Theory Class Was Conducted By Dr. Keshav Mehra Sir- (Entomology)</u> Discussion On 'Pests of Groundnut' 	
Friday [27-08-2021]	No Work	
Saturday [28-08-2021]	Holiday	-
Sunday	-	-

Weekly Report-(Week – 5)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
Monday (30-08-2021)	Holiday (Janmashtami)	-
Tuesday [31-08-2021]	Discussion About Village Allotment And Field	

	Training With Sir.	
Wednesday [1-09-2021]	Holiday	
Thursday [2-09-2021]	Holiday	
Friday [3-09-2021]	<ul style="list-style-type: none"> Farmer Was Allotted To Us By Sir For Village Attachment Training <p><u>Entomology:</u></p> <ul style="list-style-type: none"> Insect-Pest Identification In Cotton Crop (Identified White Flies, Jassids And Aphids) 	
Saturday[4-09-2021]	Holiday	-
Sunday [5-09-2021]	Holiday	-

Weekly Report-(Week – 6)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
Monday [6-09-2021]	<p><u>Entomology-</u> General Discussion By Dr. Keshav Mehra Sir On Grasshopper And Locust.</p> <p><u>Agronomy:-</u></p> <ul style="list-style-type: none"> Insecticide Spraying Using Drone In The Groundnut Field Was Done At Field Of Kvk, Bikaner. Insecticide ‘Emacectin Benzoate 5sg’ Was Used In The Groundnut Field To Control Foliage Feeders. Live Demonstration Of ‘Drone Technology’ At Kvk, Bikaner By ‘Garuda Aerospace’ 	-

	Team From Chennai.	
Tuesday [7-09-2021]	Holiday	
Wednesday [8-09-2021]	Holiday	
Thursday [9-09-2021]	Holiday	
Friday [10-09-2021]	Visit To Our FarmerField For Village Attachment Training Programme In Akkasar Village.	
Saturday [11-09-2021]	Holiday	-
Sunday [12-09-2021]	-	-

WEEKLY REPORT-(Week – 7)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
Monday[13-09-2021]	Going To Farmers Field	-
Tuesday [14-09-2021]	Holiday	
Wednesday [15-09-2021]	Going To Farmers Field	
Thursday [16-09-2021]	Holiday	
Friday [17-09-2021]	Vegetable Seeds Distribution Program At KVK, Bikaner-I	
Saturday[18-09-2021]	Holiday	-
Sunday [19-09-2021]	-	-

WEEKLY REPORT-(Week – 8)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
Monday [20-09-2021]	Field Work (Village Attachment).	-
Tuesday [21-09-2021]	Field Work (Village Attachment).	
Wednesday[22-09-2021]	Field Work (Village Attachment).	
Thursday [23-09-2021]	Field Work (Village Attachment).	
Friday [24-09-2021]	Field Work (Village Attachment).	
Saturday [25-09-2021]	Field Work (Village Attachment)	-
Sunday [26-09-2021]		-

WEEKLY REPORT-(Week – 9)

Work Days & Date	Abstract Of Work Done (Work At Farmer's Field)	Signature & Designation Of Visitors / Contact Farmer
Monday [27-09-2021]	Field Work (Village Attachment)	
Tuesday [28-09-2021]	Field Work (Village Attachment)	
Wednesday [29-09-2021]	Field Work (Village Attachment)	
Thursday [30-09-2021]	Field Work (Village Attachment)	
Friday [1-10-2021]	Field Work (Village Attachment)	
Saturday[2-10-2021]	-	-
Sunday [3-10-2021]	-	-

WEEKLY REPORT-(Week – 10)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
Monday [04-10-2021]	No Work	
Tuesday [05-10-2021]	No Work	
Wednesday [06-10-2021]	No Work	
Thursday [07-10-2021]	No Work	
Friday [08-10-2021]	No Work	
Saturday [09-10-2021]	-	-
Sunday [10-10-2021]	-	-

WEEKLY REPORT-(Week – 11)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
Monday [11-10-2021]	No Work	
Tuesday [12-10-2021]	Visit To Farmer's Field (Husangsar) For A Program Waste To Wealth With Dr. Keshavmehra Sir.	
Wednesday [13-10-2021]	No Work	
Thursday[14-10-2021]	No Work	

Friday[15-10-2021]	No Work	
Saturday [16-10-2021]	No Work -	-
Sunday [17-10-2021]	-	-

Weekly Report-(Week – 12 &13)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
Monday [18-10-2021]	Nursery Visit	
Tuesday [19-10-2021]	Nursery Visit	
Wednesday [20-10-2021]	Nursery Visit	
Thursday [21-10-2021]	Nursery Visit	
Friday [22-10-2021]	Nursery Visit	
Saturday [23-10-2021]	Nursery Visit-	-
Sunday [24-10-2021]	-	-
Monday[25-10-2021]	Marushakti Visit	
Tuesday[26-10-2021]	Holiday	
Wednesday [27-10-2021]	Holiday	
Thursday[28-10-2021]	Holiday	
Friday[29-10-2021]	Holiday	
Saturday [30-10-2021]	Holiday	
Sunday[31-10-2021]	Holiday	

CHAPTER – 2

AGRO INDUSTRIAL ATTACHMENT (AIA)

PERFORMA FOR DAILY DIARY OF STUDENT

(To be maintained by the student in ruled notebook)

1. Name Of The Student : PANKAJ SUTHAR
2. Enrolment No. : RNBGU201800089
3. Name Of The College : RNB GLOBAL UNIVERSITY, BIKANER
4. Aia In-Charge And Guide : Dr. GYAN SINGH MEENA
5. Industry Name : Shri Char Bhuja Agro Industries Pvt. Ltd.
6. Abstract Of Work : Learning About Seed Processing Unit At
Industry, Bikaner
7. INDUSTRY ADDRESS : F-135, RIICO Industrial Area, Beechwal,
Bikaner.

WEEKLY REPORT-(WEEK -1)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
Monday [15-11-2021]	-	-
Tuesday [16-11-2021]		
Wednesday [17-11-2021]	Examination At Kvk, Bikaner	
Thursday [18-11-2021]	-	
Friday [19-11-2021]	Guru Nanak Jayanti Holiday	-

Saturday [20-11-2021]	-	-
Sunday	-	-

WEEKLY REPORT-(WEEK -2)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
Monday [22-11-2021]	Reporting At Shri Char BhujaAgro Industries	-
Tuesday [23-11-2021]	No Work	
Wednesday [24-11-2021]	No Work	
Thursday [25-11-2021]	No Work	
Friday [26-11-2021]	Attendance Was Marked	-
Saturday [27-11-2021]	Holiday	-
Sunday	-	-

WEEKLY REPORT-(WEEK - 3)

Work Days & Date	Abstract Of Work Done	Signature & Designation Of Visitors / Contact Farmer
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Monday [29-11-2021]	<ul style="list-style-type: none"> • Learned About Different Seed Processing Machines Such As: - Pre-Cleaner, Grader, Indent Cylinder And Gravity Cleaner. • Also Learned About Different Classes Of Seeds And Tags, Seed Treatment, Stacking Of Grain Bags, Fumigation For Pest Control And Storage Grain Pests. 	-
Tuesday [30-11-2021]	Holiday	
Wednesday [1-12-2021]	Holiday	
Thursday [2-12-2021]		
Friday [3-12-2021]		-
Saturday [4-12-2021]		-
Sunday	-	-