Training Manual and Training Phases for Farmers
on
Improved Agricultural Practices (IAP)

Component-1 Productivity Enhancement

UPAGREES Project - UPDASP

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1. Introduction

The Uttar Pradesh Agriculture Growth and Rural Enterprise Ecosystem Strengthening (UP AGREES) is a World Bank–funded initiative aimed at enhancing climate resilience and accelerating commercialization of agrifood systems in selected regions of Uttar Pradesh. The project seeks to create an enabling ecosystem to reduce poverty, food insecurity, and malnutrition among rural communities. With a total outlay of ₹4,000 crore over a six-year implementation period, UP AGREES supports farmers primarily through farmer collectives and Agri-based MSMEs.

The project covers 21 districts in Eastern Uttar Pradesh and 7 districts in the Bundelkhand region. By promoting climate-smart production practices and compliance with improved agricultural and environmentally sustainable standards, the initiative aims to enhance the competitiveness of agricultural produce in both national and international markets.

Capacity building of key stakeholders, particularly practicing farmers-is essentials for promoting Improved Agricultural Practices (IAP) at the field level. This training manual offers comprehensive guidance on general IAP to enhance productivity, improve product quality, strengthen environmental sustainability, and increase farm incomes. It also provides crop-specific recommendations across pre- and post-harvest stages, including processing, packaging and marketing.

2. Purpose

The training manual is designed to support trainers in building the capacities of extension workers and farmers across project areas, with a strong focus on Integrated Crop Management (ICM) practices. It serves as a reference resource for designing and delivering IAP training programs, enabling FPGs to promote environmentally sustainable and socially responsible agricultural practices.

3. Composition

Each module session would be delivered using a combination of presentations, visual illustrations, field visits, and images/videos, followed by interactive brainstorming and group work. The individual modules are illustrated here under: -

3.1 Module - 1

Module	Session	Time	Topics /Activity
IAP Introduction	Session 1.1 Welcome, introductions and pre-assessment	1 hours	Participants introduction in an innovative and interactive manner
	Session Break 15 minutes		
	Session 1.2 Improved agriculture practices (IAP), types and standards	2 hours	1.2.1 IAP types 1.2.2 IAP standards
	Session's Evaluation 30 minutes		

3.2 Module - 2

Module	Session	Time	Topics /Activity
IAP Planning	Session 2.1: Site feasibility, selection and site map preparation	1hour	2.1.1 Orientation of participants on methodology for site selection and mapping 2.1.2 Preparation of notes on site selection, mapping and feedback session for improvement
	Session's Evaluation 15 minutes		

3.3 Module - 3

Module	Session	Time	Topics /Activity
IAP Implementation	Session 3.1 Suitability, selection and management of seed & seedlings, manures/fertilizers and other essential inputs	2 hours	3.1.1. Management of seeds & seedlings 3.1.2: Management of manures / fertilizers and other essential inputs
	Session's Evaluation 30 minutes		
	Session 3.2. Suitability, selection and safe management of agrochemicals	1 hour	3.2.1. Management of agrochemicals
	Session's Evaluation 15 minutes		
	Session 3.3. Irrigation Management, quality, safeguards and methods of applications	1 hour	3.3.1. Irrigation and water management
	Session's Evaluation 15 minutes		
	Session 3.4. Harvesting and handling of produce	1 hour	3.4.1. Harvesting, time, methods and safeguards
	Session's Evaluation 15 minutes		

3.4 Module - 4

<table>
<tr><th colspan="4">MODULE-4</th></tr>
<tr><th>Module</th><th>Session</th><th>Time</th><th>Topics /Activity</th></tr>
<tr><td rowspan="4">IAP
Post harvest management</td><td>Session 4.1
Storage methods and standards</td><td>2 hours</td><td>4.1.1Transportation of produce from threshing floor to storage, packing and handling of produce
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Documentation, record keeping and traceability</td><td>2 hours</td><td>4.2.1 Documentation and record keeping
4.2.2 Product Traceability</td></tr>
<tr><td colspan="3">Session’s Evaluation 30 minutes</td></tr>
<tr><td colspan="4">Post-training evaluation, final feedback and certificates distribution 1 hour</td></tr>
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4. Note for the Facilitator

Review all sessions thoroughly and familiarize yourself with the activities and flow in advance.

- Prepare required materials beforehand and clearly display session objectives on a flip chart.
- Use energizers breaking through the monotony to maintain participant interest and engagement.
- Support participants with limited literacy by helping them share responses using sticky notes or flip charts, and by using visuals or pictures wherever possible.
- Minimize lecture time; keep sessions interactive, participatory, and engaging.
- Clarify and correct any incorrect information or misconceptions shared by participants.
- Conclude each activity with a reflection session, jointly summarizing learnings and reinforcing key messages.
- Ensure inclusive participation by encouraging all participants and preventing dominance of any individual.

5. Training Evaluation Method

Various training evaluation methods used in this training are as under-

- Conduct pre and post-training assessments to evaluate improvement in participants’ understanding and learnings.
- Participant feedback to capture relevance, clarity, and usefulness of the training.
- Daily evaluations and recap sessions conducted at the end of each day.
- Session-wise evaluations carried out at the conclusion of each module.
- A final training evaluation checklist to assess overall effectiveness and outcomes.

6. Training Sessions

6.1 Module 1: IAP Introduction

Session 1.1: Welcome, Introductions and Pre-assessment	
Objectives	Know participants, their expectations and assess level of their knowledge
Delivery method	Pre training assessment through brainstorming
Materials required	Worksheets with pre-test questionnaire
Time	1hour
Session Break	15 minutes

Group work on Introductions and Pre-assessment
1. Welcome participants to the training session. 2. Facilitate participant introductions, including name, place of origin, and expectations from the training. 3. Assign each participant a unique code to use pre- and post-training assessments. 4. Participants are expected to memorise their code 5. Distribute the pre-test questionnaire worksheet and allow them to answer and finish it within15 minutes remind them to write their code on the worksheet. 6. Facilitator shall help the participant having limited literacy by recording their responses. 7. Clarify the queries raised by the participants to ensure effective assessment 8. Collect pre-test worksheets after 15 minutes, ensuring that all sheets carry the participant codes.

Session 1.2: Improved Agricultural Practices (IAP)- types and standards	
Objectives	Orient training participants about the various types of practices and standards set forth by the competent institutions
Delivery method	Brainstorming, group discussion, presentation and redressal of queries
Materials needed	Flip chart with stand, marker pens, sticky notes
Time	2 hours
Session's Evaluation	30 minutes

Group work on Improved Agricultural Practices
1. Inform participants that this section consists of three group activities. 2. Invite a volunteer to read the session objectives aloud. 3. Explain and clarify the objectives of the session. 4. Reiterate that the activity aims to facilitate discussion on the concept of IAP and its core pillars. 5. Engage participant querying with their understanding about Improved Agricultural Practices. 6. Summarize and record participant responses on a flip chart. 7. Clarify the queries raised by the participants to ensure effective understanding.

Key information for Group work on Improved Agricultural Practices
1. Improved Agricultural Practices to be implemented across the entire value chain—from • Pre-sowing activities such as site selection and soil preparation, • Sowing and crop growth stages • Harvesting and post-harvest management which includes threshing, cleaning, grading, packaging, transportation and storage. 2. IAP encompasses practices that promotes • Environmental, economic, and social sustainability in on-farm operations • Ensuring safe production of high-quality food and non-food agricultural products. 3. IAP is structured around four core pillars • Food Quality • Economic Viability • Environmental Sustainability • Social Acceptability**.**

6.2 Module 2: IAP Planning

Session 2.1: Activity for site mapping	
Objectives	Orient the participants in managing the sites of productions.
Delivery method	Brainstorming and group discussion
Materials needed	Flip chart with stand, marker pens, sticky notes
Time	1 hour
Session's Evaluation	15 minutes

Group work on activity for site mapping
1. Divide participants into smaller groups. 2. Explain the key factors and information to be considered while preparing a site map. 3. Upon completion, request one representative from each group to present the site map, followed by group discussion. 4. Clarify the queries raised by the participants.

Key information on site mapping activity
A site map should be prepared and maintained on record, capturing the following elements: • Production areas • Site slope and terrain features • Locations of water sources • Storage areas for fertilizers, pesticides, weedicides, and other soil amendments • Farmyard manure heaps • Composting sites • Produce storage areas, farm buildings, and access roads

6.3 Module 3: IAP Implementation

Session 3.1: Suitability, selection and management	
Objectives	• Develop understanding of the training participants on management of seed & seedlings. • Management of soil health, supplementation of manure, fertilizers and other essential inputs
Delivery method	Brainstorming, group discussion, presentation and redressal of queries
Materials needed	Flip charts with stand, marker pens, paper & sticky notes
Time	2 hours
Session's Evaluation	30 minutes

Group work on Management of seeds & seedlings

1. Welcome participants back to the training session under Module 3.
2. Invite a volunteer to read aloud the objectives of Session 3.1, followed by a brief explanation by the facilitator.
3. Explain that the group activity aims to build understanding of effective management of seed & seedlings.
4. Divide participants into three groups.
5. Assign discussion themes to each group as follows:
   Group 1: Factors to consider while selecting seeds or seedlings.
   Group 2: Safety considerations in the use of chemicals for seed & seedlings.
   Group 3: Key records to be maintained for seed & seedlings.
6. Facilitate groups to note their discussion points in short phrases or keywords on paper.
7. Allow 10 minutes for group discussion and documentation of key points.
8. After 10 minutes, invite group representatives to post their notes on the flip charts, once posted, the facilitator would summarize the key discussion points.
9. Supplement participants input by explaining best practices in seed & seedlings management
10. Address queries and conclude the session with a summary of key learnings.

Key information for Management of seeds & seedlings

1. Select locally adaptable crop varieties with high germination capacity, analytical and genetic purity, and resistance to seed-borne diseases, pests, and major climatic stresses. Climate-resilient varieties[1] are preferred, as they deliver stable and higher yields under climate-vulnerable conditions.
2. Seeds and seedlings may pose a risk of chemical contamination due to treatments applied during seed processing or nursery production. To minimize residue risks, only chemicals approved by competent level should be used, and prescribed withholding periods must be strictly followed.
3. Duly recommended and certified crop varieties shall be used to ensures higher productivity.
4. Maintain proper records of seed & seedlings under following heads:
   - Crop
   - Variety
   - Certification class
   - Lot number
   - Germination percentage (minimum)
   - Physical purity percentage (minimum)
   - Genetic purity percentage (minimum)
   - Producer
   - Available any other information

[1] *Climate resilience of varieties refers to the characteristics to grow and produce under biotic (pests, disease, weeds) and abiotic stresses (drought, heat stress i.e. low or high temperature, water logging i.e. deficient or excessive water, high salinity, heavy metals, and ultraviolet radiation)*

Group work on Management of soil health, supplementation of manure, fertilizers and other essential inputs

1. Explain to participants that this group work aims to build understanding on management of supplements as per the soil test reports and emphasizing the balance use of nutrients.
2. Engage participants through template questions and record key responses on separate flip charts for each topic:
   - Ask whether participants are aware of soil testing and balanced nutrient application based on soil test report
   - Invite a participant to share her/his experience in using balanced fertilization based upon the soil test report to make an applied understanding for other trainees.
   - Ask participants what factors they consider when purchasing fertilizers to ensure product quality,
3. Ask whether participants maintain records of fertilizers & other supplements on product name, source, and other relevant information
4. Summarize and read out the key discussion points captured on the flip charts.
5. Complement participant inputs by explaining best practices for management of fertilizer and other supplements.
6. Address queries and conclude the session with a summary of key learnings

Key information for Management of Manure, Fertilizers and other Essential Inputs

1. Manure, fertilizers and other essentials inputs should be applied systematically based on soil test report.
2. Inputs shall be purchased from duly accredited assured agencies by competent institutions.
3. In absence of soil test report the nutrient application shall be practiced based upon the regional recommendations of central/state government organization.
4. The manure and fertilizers shall be stored properly to avoid nutrient loss due to exposer of excessive heat & humidity.
5. Detailed records of fertilizers and essentials inputs should be maintained under following heads.
   - Product details
   - Date of manufacturing
   - Producer
   - Quantity
   - Any other relevant information

Session's Evaluation

Ask the following questions to assess participants' understanding of the session:

- Factors to be considered while purchasing seeds & seedlings.
- From where seeds & seedlings to be procured for ensuring high productivity?
- What information should be recorded for seeds & seedlings?
- What considerations are essential for the effective and safe use of fertilizers?
- What precaution shall be taken while procuring manure/fertilizers to ensure product quality?
- What details should be maintained in records for manure, fertilizers and other suppliments?

Session 3.2: Suitability, selection and safe management of agrochemicals	
Objectives	Building capacity of the training participant on safe management of agrochemicals used in crop production & farm operations
Delivery method	Brainstorming, group discussion, presentation and queries redressal
Materials needed	Flip charts with stands, marker pens and papers
Time	1 hours
Session's Evaluation	15 minutes

Group work on Management of agrochemicals

1. Invite a volunteer to read the session objectives aloud.
2. Explain that the activity aims to build understanding of the safe management of chemicals and agrochemicals.
3. Clarify that the session will also highlight the importance of food safety in agricultural production.
4. Emphasize adherence to pesticide and fertilizer laws and regulations to minimize environmental contamination and risks to human health.
5. Engage participants through guided questions and record key responses on separate flip charts for each topic.
6. Ask participants if they are familiar with Integrated Pest Management (IPM); request those who are aware to raise their hands.
7. Invite participants familiar with chemical rotation strategies to explain their understanding and facilitate discussion.
8. Ask participants knowledgeable about IPM to share their understanding and facilitate an interactive discussion.
9. Ask whether participants are aware of Pre-Harvest Intervals (PHIs); request a show of hands.
10. Invite participants familiar with PHIs to explain their understanding and facilitate discussion.
11. Ask participants if they know how to apply pesticides safely; request a show of hands.
12. Invite participants to demonstrate safe pesticide application practices, including appropriate spraying time, wind direction, coverage of upper and lower leaf surfaces, and use of personal protective equipment (PPE).
13. Ask participants if they are aware of chemical residues and Maximum Residue Limits (MRLs); request a show of hands.
14. Invite participants to explain their understanding of chemical residues and MRLs, and discuss record-keeping practices for pesticide applications, including details maintained in records.
15. Summarize and read out the key discussion points captured during the session.
16. Complement participant inputs by explaining best practices for the safe management of agrochemicals and other chemicals.
17. Correct misconceptions if any, shared during the discussion.
18. Address participant questions or clarifications and conclude the session with a summary of key takeaways.

Key information for Management of agrochemicals

1. Adopt **Integrated Pest Management (IPM)** to minimize pesticide use for pest and disease control.
2. Strictly comply with applicable **pesticide and fertilizer laws and regulations** to reduce environmental and human health risks.
3. Purchase and use only **registered and recommended products** from licensed suppliers.
4. Observe prescribed **Pre-Harvest Intervals (PHIs)** for each agrochemical and crop.
5. Follow **chemical rotation strategies** and crop protection measures as recommended by the Department of Agriculture (DoA).
6. Apply chemicals strictly according to **label instructions or permits** issued by competent authorities.

7. Avoid mixing more than two chemicals unless compatibility duly recommended by a competent authority.
8. Maintain chemical application equipment in good working condition and inspect it at least annually by a technically qualified person.
9. Clean equipment after each use and dispose cleaning agents safely.
10. Dispose of surplus spray solutions in a manner it does not contaminates environment.
11. Systematically handle application of chemicals.
12. Handle, store, and dispose of fuels, oils, and any other chemical separately to avoid environmental hazards.
13. Chemicals are stored in a well-lit and ventilated facility with access restricted to authorized personnel only.
14. Store liquid chemicals below powders; do not reuse empty containers and secure them until disposal.
15. Disposal of empty chemical containers shall be adhered as per regulatory directives.
16. Records of stored chemicals are maintained, including product name, quantity, manufacturing and expiry dates.
17. Record all chemical applications for each crop, detailing the product used, purpose, location, date, application rate and method, weather conditions, and operator name.

Session 3.3: Irrigation management; quality, safety method & time of applications	
Objectives	To orient the farmers in ensuring irrigation and water management techniques for various crops for improved productivity
Delivery method	Brainstorming, group discussion, presentation and queries redressal
Materials needed	Flip charts with stands, marker pens, sticky notes
Time	1 hours
Session's Evaluation	15 minutes

Group work on Irrigation and water management

1. Invite a volunteer to read the session objectives aloud, followed by a brief explanation by the facilitator.
2. Request participants to read objectives across sessions to ensure active participation.
3. This activity is designed to build understanding of effective irrigation and water management practices.
4. Engage participants through guided questions and document key responses on separate flip charts:
   - Ask whether participants have experience with water testing; request those who do have to raise their hands. Invite them to describe their experience on various aspects of irrigation management e.g. irrigation practices with various crops along with details of records being maintained.
   - Ask participants if they understand the importance of water testing; invite them to explain their perspectives. Clarify that water testing is essential to assess pH, EC, Carbonate & Bicarbonate, Sodium Adsorption Ratio (SAR), Total Dissolved Solids (TDS), etc.
   - Ask participants whether they have ever got the water testing reports for their irrigation system and accordingly do they have maintained water quality records.
5. Summarize the discussion points captured and complement participant inputs by explaining recommended irrigation and water management practices as outlined in the key information.
6. Address queries and conclude the session with a summary of key learnings

Key information for Irrigation and water management

1. Water quality should be periodically tested for chemical and biological contaminations.
2. Avoid using water for irrigation from sources such as hospitals, industries, wastewater outlets, or any other source that may contaminate produce or harm the environment.
3. Irrigation practices should be based on crop water requirements, water availability, and soil moisture levels. The risk of chemical and biological contamination must be assessed for water used before irrigation/fertigation[2] and Post harvest product washing and cleaning.
4. Irrigation systems should be checked for operational efficiency during each cropping season with respect to irrigation channels of macro and micro irrigation systems, adhere the appropriate standards and manage accordingly.
5. Wastewater generated from harvesting, cleaning, and handling operations should be managed or treated to prevent off-site environmental contamination.
6. On availability of water quality reports, it should be documented for expert advisory.

[2] *Fertigation is injecting fertilizers used as soil amendments and other water-soluble products into an irrigation system.*

Session's Evaluation
Ask the following questions to assess participants' understanding of the session: • What key learnings did you take away from this session? • Should water from livestock farms, hospitals, industrial sources, or wastewater be used for irrigation in IAP production? Why or why not? • Can irrigation water pose environmental risks in addition to food safety risks? • Why is water testing important in IAP crop production? • What information should be recorded for water testing and irrigation practices?

Session 3.4: Harvesting and handling of produce	
Objectives	Impart the knowledge to participants on appropriate harvesting and post-harvest handling of the produce
Delivery method	Brainstorming, group discussion, presentation and open-ended questions
Materials needed	Flip charts with stands, marker pens and paper
Time	1 hours
Session's Evaluation	15 minutes

Group work on Harvesting, time, methods, safety and post-harvest management
1. Invite a volunteer to read the session objectives aloud. 2. Explain that the activity aims to build understanding of good harvesting and post-harvest management practices. 3. Divide participants into three groups. 4. Assign each group a specific discussion theme. 5. Ask each group to record key discussion points in short phrases or keywords on butcher paper, as outlined below: 6. **Group 1:** Precautions during harvesting to prevent mixing of other crop as well as different varieties. 7. **Group 2:** Techniques to use improved harvesting and thrashing equipment. 8. **Group 3:** Methods of winnowing, grading and transportation of produce 9. Allow ten minutes for group discussion and documentation. 10. Invite group representatives to present their findings to all participants. 11. Complement participant inputs by explaining recommended harvesting and post-harvest management practices as outlined in the key information. 12. Correct misconceptions if any, shared during the discussion. 13. Address queries and conclude the session.

Key information for harvesting time, methods, safeguards and post-harvest management

1. Appropriate harvesting practices are critical for ensuring post-harvest quality e.g. grain moisture content, shorting & grading, storability. Physical mixing may occur during harvesting and post-harvest handling due to factors such as:
    - Poorly maintained equipments, uncleaned containers, produce handling areas and produce transport vehicles.
    - Inappropriate storage conditions e.g. inadequately constructed, maintained structures
    - Using non-approved chemicals for produce treatment, cleaning and sanitation
    - Inadequate control of domestic animals, farm animals, and pests
    - Poor personal hygiene facilities and practices
2. Crops should be harvested at the appropriate maturity stage using crop-specific harvesting methods.
3. Harvesting should be carried out during daytime, if there are chances of rain than it should be accelerated or avoided wherever possible.
4. Harvested produce should be removed from the field promptly.
5. Where delays occur, produce should be kept in shad prior to transport.
6. Produce should be packed and stored in covered condition to protect it from any damage.
7. Produce should not be stored directly in contact with walls & floors.
8. Grading and packing should be done in accordance with customer and market requirements.
9. Containers should not be stacked unless they are designed to bear the load and prevent mechanical damage.
10. Ensure storage containers are adequately covered to maintain moisture balance and safeguard produce from direct exposure to sunlight.
11. Cleaned containers should be used to avoid mixing of any other material with the produce.
12. Appropriate pest control measures should be adopted in and around handling, packing, and storage areas.

Session's Evaluation

Ask the following questions to assess participants' understanding of the session:

- What factors can lead to deteriorate the quality of produce during harvesting, handling, and storage?
- What precautions should be taken during harvesting to prevent or reduce post-harvest losses?
- What are the recommended practices for equipment & containers used in harvesting, handling and storage?
- When should produce be ideally harvested to maintain quality?

6.4 Module 4: IAP - Post harvest management

Session 4.1: Storage methods	
Objectives	Building the capacity of participating trainees on storage, transportation and packing
Delivery method	Brainstorming, group discussion, presentation and open-ended questions
Materials needed	Flip charts with stands, marker pens, sticky notes
Time	2 hours
Session's Evaluation	30 minutes

Group work on storage, packing and handling of produce

1. Invite a volunteer to read the session objectives aloud.
2. Explain that the activity is designed to build understanding of safe storage, packing, and handling practices for produce.
3. Divide participants into three groups.
4. Ask each group to discuss the following questions and record key points in short phrases or keywords on chart paper:
   - What types of packaging materials have you used for storage?
   - How have you stored produce to maintain its quality?
   - Based on your experience, which packaging materials and storage methods are most appropriate for maintaining produce quality?
5. Allow 15 minutes for group discussion and documentation.
6. Invite group representatives to affix their chart papers on the flip chart board and present their discussion points to all the participants.
7. Complement participant inputs by explaining recommended storage, packing, and handling practices as outlined in the key information.
8. Correct misconceptions if any, shared during the discussion.
9. Redress participant queries.

Key information for storage, packing and handling of produce

1. Produce must not be stored in containers previously used for hazardous substances.
2. In the absence of permanent storage structures, appropriate alternatives such as super bags and bins.
3. Maintain an inventory of stored produce, including details such as produce name, quality or grade, weight, date of storage, and moisture content at the time of storage.
4. Packed containers should be clearly labelled to ensure traceability of produce.
5. Pest traps and baiting materials should be strategically placed and carefully monitored to avoid any short of risk. Location maps should be maintained regarding pest traps and baiting materials.

Group work on transportation of stored produce

1. Ask participants whether they maintain records for the transportation of produce and request those who do to raise their hands.
2. Invite participants with experience in transport record-keeping to explain what information they capture in their records.
3. Facilitate discussion by prompting additional details such as dispatch date, quantity transported and destination.
4. Summarize and read out the key discussion points shared by participants.
5. Complement participant inputs by explaining recommended practices for transportation of stored produce, as outlined in the key information.
6. Address participant's queries.

Key information for transportation of stored produce

1. Vehicles used for transporting produce should be inspected for cleanliness, absence of foreign materials, pest infestation, chemical contamination, and excess moisture before loading.
2. Transport vehicles must be properly covered to protect produce from rain, and other environmental factors that may compromise quality.
3. Detailed transportation records should be maintained for each consignment, including the date of supply, quantity of produce, and destination.

Group work on produce storage structure

1. Ask participants where they store produce before sale and how produce is stored at those locations, recording brief responses on separate flip charts.
2. Encourage participants to elaborate on storage structures being used to store their produce and facilitate an open discussion.
3. Ask whether pesticides are used to control storage pests and, if so, whether recommended dosages and safety precautions are followed.
4. Summarize and read out the key discussion points shared by participants.
5. Complement participant's inputs by explaining recommended practices for managing storage structures, as outlined in the key information.
6. Address any questions or clarifications and conclude the session with a summary of key takeaways

Key information for produce storage structures

1. Structures for produce handling, and storage should be appropriately created and maintained to avoid any damage to stored items.
2. Storage structure should preferable be located away from farm animals and their feed areas.
3. Storage structures should be inspected before use to ensure cleanliness & absence of any foreign material and pest infestation.
4. Produce should be placed on wooden platforms to avoid direct contact with the floor.
5. Storage should be designed and managed to ensure adequate ventilation and to prevent entry of birds, rodents, and other pests.
6. Produce must be stored separately from fuels, pesticides, fertilizers, and other potentially contaminating materials.
7. Only recommended pesticides should be used during storage, strictly following prescribed dosages.

Session's Evaluation
Ask the following questions to assess participants' understanding of the session: • Should containers previously use for chemicals or other hazardous substances be used for the produce storage? Why or why not? • What precautions should be taken during the storage period to maintain produce quality and ensure traceability? • What measures are required in produce handling, packing, and storage areas to prevent any contamination? • What checks and precautions are necessary for transport vehicles prior to use to avoid contamination and quality deterioration? • What information should be recorded for produce transportation?

Session 4.2: Documentation, record keeping and traceability	
Objectives	To orient and train the participants about the importance of documentation record keeping and traceability
Delivery method	Brainstorming, group discussion, presentation and open-ended questions
Materials needed	Flip charts with stands, marker pens, sticky notes
Time	1 hours
Session's Evaluation	15 minutes

Group work on Documentation, record keeping and traceability
1. Ask participants whether they have experience with documentation practices • request those who do to raise their hands. • invite participants with documentation experience to share their practices, including the duration for which records have been maintained. • facilitate discussion by prompting additional details and encouraging participants to articulate their experiences. 2. Summarize and read out the key discussion points shared by participants. 3. Complement participant inputs by explaining recommended documentation and record-keeping practices as outlined in the key information. 4. Address participants' queries.

Key information for Documentation, record keeping and traceability
1. The primary objective of documentation is to enable effective recording of produce. 2. Records provide sufficient information for safety measures compliance. 3. Records should be retained/discarded as per regulatory requirements.

Group work on Traceability

1. Ask participants whether they consider traceability necessary in IAP-based crop production and record brief responses on a flip chart.
2. Invite participants to explain their understanding of the importance of traceability and facilitate an open discussion.
3. Ask participants what information should be recorded to enable effective traceability of produce.
4. Encourage all participants to share their perspectives and facilitate inclusive discussion.
5. Summarize and read out the key discussion points shared by participants.
6. Complement participant inputs by explaining traceability and recall mechanisms as outlined in the key information.
7. Address participant queries.

Key information on Traceability `

1. The objective of traceability is to enable effective identification and tracking of produce.
2. Each production site should be assigned a unique identification code.
3. The site code should be visibly displayed at the production site and duly recorded.
4. Records should be maintained for each consignment, including date of supply, quantity of produce, and destination.
5. If produce is found potentially unsafe it must be immediately isolated.
6. The source of contamination should be investigated, corrective actions implemented to prevent recurrence, and detailed records maintained of the incident and actions taken.

Session's Evaluation

1. Ask the following questions to assess participants' understanding of the session:

- For how long the records should be maintained?
- What is the primary objective of traceability and recall systems?
- What key information must be recorded to enable effective traceability of produce?
- What immediate actions should be taken if produce is identified as potentially unsafe?

7. **Proposed Training Phases for Farmers**

Regions Covered - Bundelkhand and Eastern Uttar Pradesh

Phase	Topic	Focus
Pre-Sowing Preparation	Selection of improved seed varieties and Seed Indent Soil testing & land preparation Input planning (Manure, Fertilizer, Pesticides, Irrigation)	Emphasis on region & sowing time specific high-yielding varieties Soil health Input budgeting
Sowing Techniques	Timely sowing methods Seed treatment protocols Sowing depth & spacing	Crop-specific sowing Use of seed drills/line sowing tools Improved Agriculture Practices (IAP)
Crop Management	Irrigation scheduling Integrated nutrient & pest management Intercultural operations	IPM and INM protocols Identification and control of major pests/diseases Uses of safe inputs/chemicals
Mid-Season Training	Foliar nutrition Weed management Top dressing practices	Focus on mustard, gram and wheat nutrition Herbicide usage safety Real-time field problem-solving
Pre-Harvest Planning	Harvest readiness indicators Use of mechanized tools Labour & equipment planning	Field visit + practical demo Reduce harvest losses Safe use of harvesting equipments
Post-Harvest Handling	Cleaning, drying & grading Storage management Market Linkage Crop residue management	Moisture content testing Storage infrastructure awareness Market linkage planning with support agencies Crop residue management awareness

Support Activities and Materials

Printed learning materials	Electronic learning materials
On-field demonstration plans	Advisory points
Collaboration with KVKs of respective jurisdiction	Collaboration with Banks of respective jurisdiction