

PROCESS ANALYSIS AND FLOWCHARTING

SEMIS COURSE ON
SEED QUALITY ASSURANCE, MANAGEMENT
AND CONTROL PROCESSES

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ANALYSIS OF SEED PRODUCTION PROCESSES

- A seed company can be viewed in terms of four separate function:
 - Plant breeding research and development
 - Seed production
 - Seed processing (including seed sampling, testing and labeling)
 - Seed marketing and distribution

Breeding



Seed production



Seed processing



Marketing and distribution



Farmer

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Seed production

- Application procedures to grow seed crops
- Criteria for selecting seed grower
- Registration to grow seed crops
- Registration of seed crop for certification
 - I. Variety eligibility
 - II. Previous cropping history
 - III. Source of parental seed

Seed production

- Isolation requirements
- Time of planting,
- Seed Rate,
- Method of sowing,
- Depth of sowing,
- Verification of seed type,
- Seed treatment,
- Machine effectiveness,

Seed production

- Machine cleaning,
- Seed packaging and labels preservation
- Crop growth stage inspection and number of inspections
- Time of harvest
- Harvesting mode (machine or hand)
- Separation of males and females (hybrids)
- Identification of harvested raw seed

Seed production

- Shelling
- Packaging and marking
- Transportation
- Separation from admixture
- Samples for post harvest tests
- Post harvest soil monitoring

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Seed Processing

- ▶ Seed Intake registration
- ▶ Seed handling
- ▶ Seed drying
- ▶ Seed cleaning
- ▶ Seed grading
- ▶ Assessment of quality
- ▶ Seed treatment
- ▶ Seed sampling
- ▶ Seed packaging
- ▶ labelling

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Checks needed at every process

- ▶ Analysis of Product Integrity and Control Concerns (*identification of potential risk*).
- ▶ Determine Control Points (*Points to control the potential risk*).
- ▶ Establish Preventative Measures (*activities to manage the risk*).
- ▶ Establish Monitoring Procedures (*verification of implementation actions*).
- ▶ Establish Corrective Measures (*activities to address NCs*).
- ▶ Establish Verification Procedures (*to verify compliance*)
- ▶ Establish Record Keeping and Documentation Procedures

How to prepare flow charts

- An flow chart is a type of diagram that represents a process, showing the steps as boxes of various kinds and their order by connecting these with arrows

USES

- Flow chart are used in designing and documenting complex processes.
- Like other types of diagrams, they help to visualize what is going on and thereby help the viewer to understand the process ([Example](#)).

How to prepare flow charts

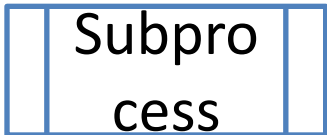
Boxes used for flow chart:



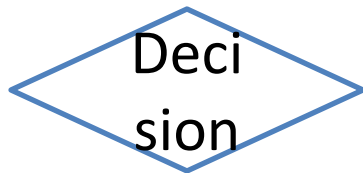
To indicate start and end of process



An activity with an input and an output



An activity that can be represented in a flow chart on its own



A process with two possible outcomes, i.e. Yes or No



An information and its medium that results from or supplements a process



To indicate the direction and the sequence and relation between processes

Thank you

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