

Theme 13: Mechanisation of a dairy farm

SOP OF FARM MACHINERY (Level 3)

Topic	Training & information Content
13.1	Farm tools & equipment
13.2	SOP of farm machinery
13.3	Maintainance of farm machinery & equipment



1. You will learn about (learning objectives):

- The importance of having standard operating procedures in regards to machinery in a dairy farm.
- Steps in formulating standard operating procedures for a farm.
- Identify common standard operating procedures used for machineries in a farm.



2. Introduction

Standard

Operating

Procedures

- Standard operating procedures (SOPs) are directions that explain how a particular job should be done and is contained in a document.
- In some places SOPs are placed in the open where it is can easily be identified and used.
- For example: how to use the milking machine, milking routine, tractor and farm machinery use & maintenance.



3. Importance of SOP in a dairy farm

- Guides employee on handling activities by providing steps and/or tools for managing a situation.
- Improves communication and reduces conflict.
- Enables a person to help in case of an emergency.
- Ensures consistency in operations.
- Reduces training time on handling procedures.



4. Development of SOPs

- SOPs are important for any organization and one can create own farm specific standard operating documents that guides staff members with step by step tasks.
- SOPs in a farm are guided by good farming practices applicable to any activity within the dairy farm.



5. Keys factors in SOP

- SOPs should be readable.
- SOPs can be particular to an activity or function, where needed it can be divided into parts for example: how to start an engine, how to do repair & maintenance, how to shut down a machine.
- SOPs should be short and clear for people who cannot read and write.
- SOPs should be systematic (step by step) and logical.



5.1 Keys factors in SOP Cont'd...

- SOPs should be placed near the work station where it is required.
- Test, update and review regularly.
- Train employees to follow the steps of the SOP.
- Have a master copy.



6. Answers provided by SOPs

- The standard operating procedures provide solutions to various answers depending on the task such as;
 - **Who** – Identify the person responsible (contact person).
 - **What** – Identifies the purpose.
 - **When** – Gives a period/time required for particular task.
 - **Where** – Identifies place for operation 'where need be'.
 - **How** – Provides directions on task handling.



7. Developing standard operating procedures (SOPs)

- Plan - SOPs should be in line with goals intended.
- First draft - Make a detailed list from which you can derive a step by step order for operations/tasks.
- Internal review - Provide a platform for employees to discuss and share output, this helps improve the first draft and can identify areas that SOPs can be split to task specific functions.



7.1 Developing standard operating procedures (SOPs), Cont'd...

- External review - Remarks and feedback from external people assist in giving more insight for improvement.
- Testing - Do the task as listed, this helps identify where improvements can be made.
- Post - Create a final copy with changes as per test results and print text in a readable format (laminated) for external use and ensure to update as required.
- Train - Train employees as per the posted SOPs this ensures consistency



8. Standard operating procedures for farm machinery/equipment

- Note that there are a number of SOPs that can be made depending on activity, brand of machinery/equipment.
- We will be able to look at a few SOPs for machinery/equipment such as;
 - SOPs on how workers when working around equipment/machinery.
 - General SOPs on machine working condition.
 - SOPs when working with tractor in the field.
 - SOPs when undertaking repairs & maintenance.



9. SOPs for workers when working with cleaning material & detergents

- All cleaning materials like brooms or detergents should be used for the right purposes only.
- All cleaning materials and detergents should be stored in designated area and conditions as per manufacturers instructions to avoid getting lost or spoilage.
- All cleaning detergents should be used at the right concentration as per instruction on the detergent label.
- When using or handling ensure you wear protective clothing, gloves and foot ware as indicated by manufacturer.



10. SOPs for workers while operating a machinery ???

- Read and follow manual as per manufacturers.
- SOPs need to be in line with laws and regulations as regards a particular activity.
- Dress appropriately (overall and shoes) for protection.
- Ensure you are in good shape and rested enough, operating machinery or tractor when tired is dangerous.
- Do not rush or take short cuts to finish an operation faster, risk situations increases with speed.



10.1 SOPs for workers while operating a machinery ???, Cont'd...

- Avoid drinking while operating a machinery.
- Be keen and attentive.
- Keep machinery and working area away from children and animals.
- Read and follow the manufacturer's operating and maintenance recommendations.
- Shut down/off all farm machinery before getting off or out.



11. SOPs on how to keep machinery in working condition

- Read and understand the operator's manual before operating the equipment, do not assume way of operation especially for new employees and new brands/design
- Equipment should be made ready for operation in the off season/when it is not being used.
- Keep equipment in good condition (grease and sharpen equipment's before use). Tractors for example should be inspected regularly since they use public roads.
- Do not start an engine in closed shed/garage.
- Always keep the PTO properly shielded.



12. Standards operations during transportation

- Always ensure the tires are properly inflated, tires with cracks or deep cuts should be replaced.
- Ensure to place a clearance flag or warning signal to warn other road users in cases where the tractor has a wide implement attached and slow down.
- Securely fasten your seat belt to avoid injuries.
- Ensure that you lift implements in right technique to reduce strain when moving implement tongue before approaching the road.
- Gear should be in high first gear.
- Properly fit the three point linkage and lock with lynchpin.



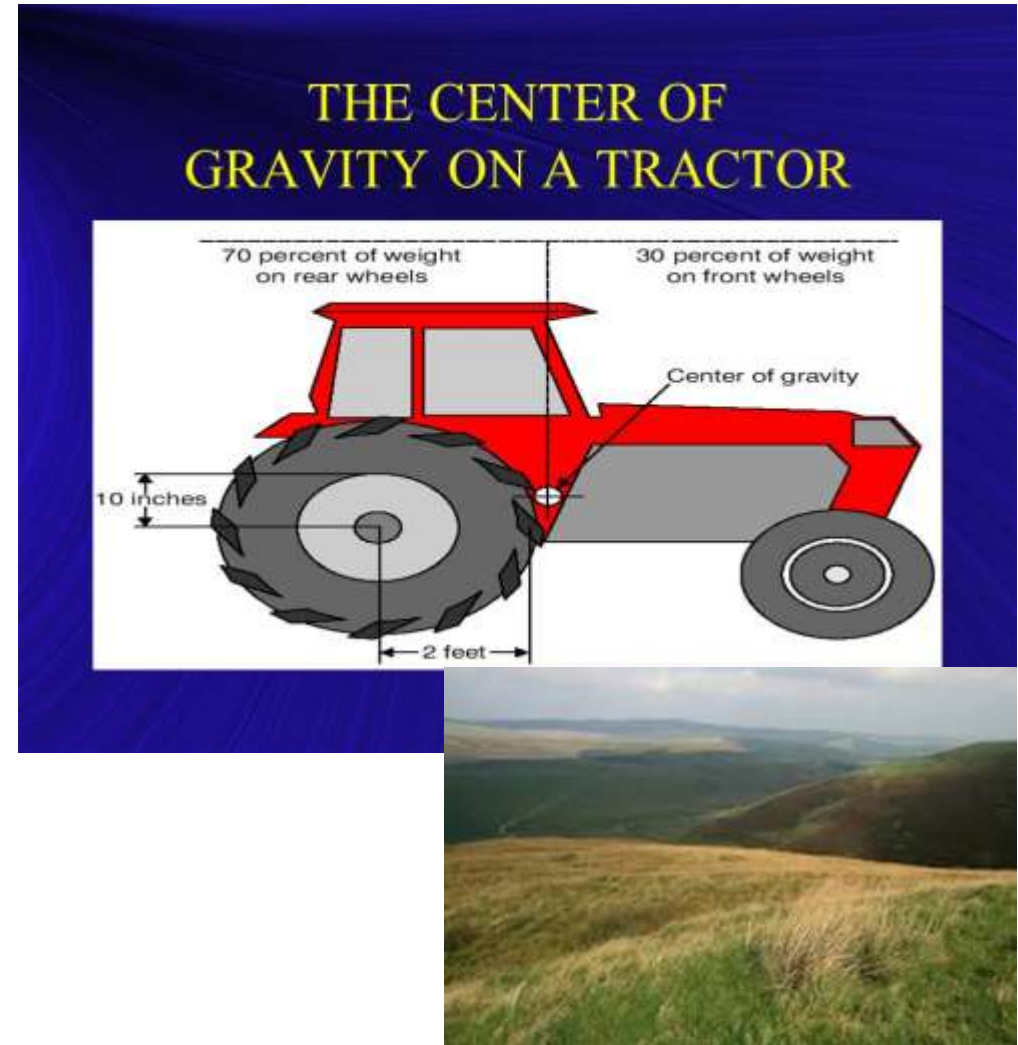
13. Safety for workers around machinery in the field

- Never allow other people on the tractor unless there is an additional seat this avoids falling off injuries
- Avoid moving/transporting implements at night due to poor visibility, this avoids accidents.
- People should not stand between the implement on attachment and the tractor when machine is ready for use.
- Avoid turning ploughs when being used in the soil.



14. SOPs of a working machinery in the field

- Ensure and beware of the stability of the machinery in the field. If the centre of gravity becomes higher the machine will be prone to tipping.
- Tractors have a high centre of gravity and are unstable on sloping ground, extending the height of the machine for example; a grain tank high speed and turns increases ability of machine to tip over **'reduce speed when turning'**.
- In East African where the terrain is sometimes hilly, make wide turns.
- No person should stand near a working machinery in the field.



14.1 SOPs of a working machinery in the field Cont'd...

- Have a communication device for emergency use only and also learn and use hand signals appropriately.
- Avoid operating tractor near holes, ditches and beware of areas prone to stones and tree stumps.
- When going downhill use a lower gear and when going uphill use highest gear to increase stability.
- Only hitch implements to the drawbar and hitch points.



14.2 SOPs of a working machinery in the field Cont'd...

- In cases of stopping ensure that you set the brakes securely.
- Do not try unsafe manoeuvres while driving.
- Do not get off a moving tractor and when doing so use the hand railing and steps do not jump to avoid injuries.
- In case the tractor gets stuck get help from another tractor and avoid attaching the rear wheels to posts or trees.



<https://youtu.be/qh4TG216mQY>

15. Avoiding machinery emergency situations

- Tires should be in good condition especially tires used for running the gear.
- Check bearings (bolts and nuts) regularly during operations.
- Frequently remove soil, build up on machinery.
- Always use locking pins when securing wagons and in public roads or in case of towing safety chains must be used.
- Ensure extra caution when working down hill or during wet conditions (rainy season) since control is more difficult.
- Never remove the radiator cap from an engine that is hot as it causes serious burns due to pressurised hot coolant.



16. SOPs for servicing machinery; General

- Equipment should be made ready for operation in the off season/when it is not being used.
- Always have the tractor in park or neutral gear before performing a service, set the brake, turn off the engine and remove the keys.
- For farm implements always make sure the implement is detached from the tractor, well secured, no turning parts.
- Switch off electrical power or detach the electrical cable from the socket before performing service/maintenance on farmstead equipment.

