



SNS COLLEGE OF TECHNOLOGY

AN AUTONOMOUS INSTITUTION

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DEPARTMENT OF AGRICULTURAL ENGINEERING

COURSE CODE & NAME: 19AGO301 & FARM MECHANISATION

III YEAR / VI SEMESTER

UNIT : I SCOPE OF MECHANISATION IN INDIA

TOPIC : 4 – Selection of Farm Machines





Selection of Tractor

- **Land holding** - 1 hp for every 2 ha of land
- **Cropping pattern** - more than one crop 1.5 ha/hp
- **Soil** - less wheel base, higher ground clearance and low overall weight in light soil
- **Climatic sand** - Very hot and cool
- **Repair facilities** - Has dealer nearby
- **Running Cost** - Less SFC so mining cost is less.
- **Initial cost and resale value** - keep resale value in mind, initial cost should not be high
- **Test report** - Released from farm machinery testing stations should be consulted for guidance



Trade mark: We cannot judge the machine by its appearance. Choose an equipment of well-known and reputed trade mark e.g. HMT 2511, HMT 3511 etc. It is distinguished by the mark of a trader to his goods to distinguish from other traders.

Trade Name: -do- (Dettol, crocin etc.)

Model: Buy the latest model with better features like Mahindra B-275, Mahindra DI-540, and Farmtrac-50 etc.

Whether or not the machine is an approved design: BIS or ISO mark (International standard organization) (Beauro of Indian Standards).

Repair facilities: To see whether the machine is repairable or not, how far is the service station or existence of repair shop, how easily the repair can be done?

Availability of spare parts: Whether components of machine are easily available?



7. Design features:

- i) Points of wear i.e. type of bearing etc. provision for lubrication
- ii) Ease of adjustments i.e. disc angle, tilt angle
- iii) Safety provisions i.e. shielding of rotary members
- iv) Appearance of the machine (eye appeal, aesthetics)
- v) Vibrations and noise in the machine should be low

8. Ease of operation: It should not require unnecessary amount of power and labour to operate. Ease of operation may depend upon correct adjustment. Modern machines are equipped with power and hydraulic lifts and once adjusted properly they would require little effort to operate expecting steering and turning.

9. Ease of adjustment: Methods and provisions for adjustments of various parts, and adjustment should be easy to make and less time consuming. Discourage the “I am in hurry attitude” to make correct adjustments.



10. Adaptability of machine to work and working conditions (environment and versatility): Select the machine or tool which can work under a wide range of conditions. It must be easy to adopt the equipment to different soil, crop and environmental conditions.

11. Quick change of units: For machines which are one built in unit packages and design to change them like from plough to cultivator or like multi crop planter, the time required for the change over must be minimum.

12. Maneuverability: See if the equipment is a trailed or mounted type. Mounted equipments are easy to lift and easy to turn. Trail equipments which are attached to the draw bar of a tractor cannot make sharp turns. Extended and swinging drawbars are one aid for short turning. (articulated frames are provided in some equipment). Choose a machine with a proper size of wheels. A small wheel sinks into loose soil, drops into shallow ditches and furrows and for the tractor turning is difficult.

13. Human comfort: Human comfort is an important factor in the selection and operation of equipment. The seat must be comfortable, stable and adjustable to suit different sized individuals. There should be proper operator safety provisions.



14. **Some other factors are:**

- Power requirement: Power required for operating the equipment. It determines the size of the equipment.
- Cost of operation: Initial cost and operational cost of m/c i.e. economical viability of the machine.
- Initial cost of the m/c
- Availability on custom hiring
- Years of services expected
- Economics of the equipment in relation to size of farm and work to be performed
- If possible purchase multipurpose machines with minimum adjustments for example wheel hand hoe, till planter, ridger seeder
- Capacity of the machine e.g. if you have 10 acre field old tractor can do for that.



Thank You