



Madanapalle Institute of Technology & Science

(UGC- AUTONOMOUS INSTITUTION)

Madanapalle-517325, Annamayya Dist., Andhra Pradesh

TECHNICAL SKILL DEVELOPMENT INSTITUTE (t-SDI)

APSSDC SIEMENS: Agriculture Machinery Lab

Description

The agro machinery labs play a vital role in advancing agricultural technology, improving farm efficiency, enhancing safety, and promoting sustainable farming practices. They are essential for the development, testing, and improvement of agricultural machinery that is critical to modern agriculture. The Agro machinery lab has been set up to introduce modern agricultural equipment to the students and local farmers and impart training. Showcasing the cut section of the tractor engine is an excellent way to show the students inner workings of a tractor IC engine. Several agro equipments that make cultivation practice fast, easy, and efficient are also introduced to the students.

Equipment available in the lab

1. Wheel-type Tractor fitted with diesel engine with standard accessories
2. Seed Cum Fertilizer Drill -9 tyne
3. Multi Crop Thresher
4. Centrifugal Pump With Electric Motor – 2HP
5. Submersible Pump Complete Unit
6. DG Set - 3 Kw, Single Phase , manually operated
7. Sprinkler Type Irrigation Systems
8. Drip Irrigation Systems (Demonstration pipe set)
9. Solar Pump With 300 Watt Panel , Pump, Battery, Structure and Converter
10. Chara Cutter
11. Cut Section of Tractor Engine working model
12. Cut Section of Submersible Pump
13. Water Testing Kit



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14. Soil Testing Kit

- Testing Parameters:
- (a) Nitrogen (N) Kg/Ha
 - (b) Phosphors (P) (Kg/Ha)
 - (c) Potassium (K) Kg/Ha
 - (d) Organic Carbon (%) Water Testing Kit

Beneficiaries of the Agro Machinery Lab

The lab has the primary purpose of educating the students and farmers from the local community about the latest cultivation practices and introducing them to modern tools and techniques to make cultivation practice more efficient. The operation of the tractor, its maintenance, inner working of a tractor engine, mounting various attachments to the tractor and operating them, operation of the hydraulic system of a tractor, etc are demonstrated and training is provided. The operation of various farm machinery and the use of efficient irrigation methods like Drip and Sprinkler irrigation systems are demonstrated.

Area of Focus

- Operation of a tractor and its various utilities in farming operation
- inner working of an IC engine through cut mode
- Complete maintenance and repair of tractor including engine, cooling system, lubricating system, air intake system, hydraulic system etc.
- Mounting of various machinery on the tractor and their operations
- Operation and maintenance of Sprinkler irrigation system
- Operation and maintenance of Drip irrigation system
- Test quality parameters of Irrigation water to avoid salinity/alkalinity of soil
- Test on the soil to detect available nutrients and determine need of fertilizers
- Operation and maintenance of solar water pumping system
- Operation and maintenance of submersible and centrifugal pumps
- Mounting Seed Cum Fertilizer Drill on the tractor and their proper operation procedure
- Use of Multi-Crop Thresher



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Open Cut Module of tractor Engine



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Photocopy of Seeder & Cultivator



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Photocopy of Tactor & Chopper



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Photocopy of submersible pump



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