1. Soil & Plant Analysis Equipment

Soil Testing Tools:

- Soil pH meter / pH testing kit
- Soil nutrient testing kits (N, P, K)
- Soil texture & structure analysis kits
- Soil moisture testers
- Organic matter testing equipment
- TDS (Total Dissolved Solids) meters & EC (Electrical Conductivity) meters

Plant Health & Tissue Testing:

- Chlorophyll meter
- Portable plant nutrient testing kit
- Leaf area meter
- Hand lens / magnifying glass
- Portable spectroscopy tools (optional)

2. Vedic & Traditional Farming Tools

These support traditional practices used in Vedic Agriculture:

- Cow dung & cow urine collection setup (for Gomaya, Go-ark)
- Wooden seed drills (traditional)
- Manual seeders & planters
- Cow-based composting units / Vedic compost pits
- Khadha (herbal) preparation vessels

3. Organic Fertilizer & Bio-input Preparation

- Compost bins / tumblers
- Vermicompost beds & trays
- Earthworm culture (Eisenia fetida) containers
- Bio-fertilizer culture jars / incubators
- Biozyme / jeevamrut preparation drums

4. Water & Irrigation Monitoring

- Soil moisture sensors
- Portable flow meters
- Drip and sprinkler system testing kits
- Tensiometer

5. Recording & Observation Tools

- Laboratory notebooks / record sheets
- Digital cameras / smartphone for documentation
- Measuring scales & balances
- Calibrated measuring cylinders & beakers
- GPS devices for field mapping

6. Reference & Learning Resources

- Vedic Agriculture texts & manuals:
  - Annadata Sukham Bhava
  - Krishi Parashara
  - Krishi Tantra / Krishi Sarasa

• Journals & research papers on traditional agriculture
• Vedic cosmology & farming philosophy materials

7. Basic Lab Infrastructure

• Work benches & storage shelves
• Centrifuge (for soil/plant extract separation) (optional)
• Microscope (for soil/plant observation)
• Refrigerator (for sample storage)

8. Optional Modern Support Tools

These help integrate traditional practices with data-driven insights.

Sensors & Data Tools:
• Arduino / Raspberry Pi starter kits
• Soil & environment IoT sensors (moisture, temperature, humidity)
• Data loggers
• Wireless connectivity modules (LoRa/Zigbee)

Software:
• Spreadsheet software (Excel, Google Sheets)
• Field data collection apps (ODK, KoboToolbox)
• Mapping tools (QGIS)

9. Field & Safety Gear

• Safety gloves & goggles
• Boots & field shoes
• Weather-proof field bags
• First-aid kit

Sample Budget Estimate (India)

Category	Approx Cost (₹)
Soil & Plant Test Kits	5,000 – 25,000
Organic Input Preparation	2,000 – 15,000
Lab Tools (Microscope / Balances)	10,000 – 50,000
Sensors & IoT (optional)	5,000 – 30,000
Reference Materials	1,000 – 10,000
Field Gear	3,000 – 10,000

Note: This is a flexible setup — you can start with core soil & plant analysis tools first and scale up.

How to Set Up & Use the Lab

Step 1: Define Your Vedic Agriculture Goals
• Soil fertility enhancement?
• Organic input formulation?
• Research on traditional practices?
• Integration with sensor-based insights?

Step 2: Organize by Work Zones
• Soil testing station

- Organic input preparation area
- Documentation & data zone
- Field sampling & equipment storage

Step 3: Collect Baseline Data
- Soil properties (pH, nutrients)
- Plant health markers
- Field GPS points & mapping

Step 4: Conduct Vedic Preparations
- Prepare Jeevamrut, Gomaya
- Apply to field plots
- Observe & record

Step 5: Analyze & Iterate
- Compare effects
- Adjust schedules
- Document findings