Soil Sathi Agri Implant
A Digital Transformation in Agriculture

Arogyam
Agriculture Challenge to Address

- Reduced yield from the land
- High input cost of farming
- Lack of reliable information, linking production to market
- Disguised unemployment in agriculture
Arogyam Soil Sathi Solution

Soil health | Fertiliser suggestion | Weather Forecast | Map Generation

Approx 100 gm | Portable | Inbuilt battery Operated | GPS Enabled | Connected to Cloud

Easy To Use | Accurate | Reliable

EC, pH, **Macro**(OC, N, P, K), **Secondary** (S, Mg), **Micro** (Fe, Mn, Cu, Zn),

**Others** (As, Ca, Coliform Bacteria, Pesticides), **Water** (pH, NO2, NO3, PO4, DO, Free CO2, NH3, H2S)
Soil Sathi Benefit

- High throughput: 30 samples / hr (*)
- Input cost: 30% (*)
- Yield: 30% (*)
- Farmer outreach (**) 8 times (*)

(*) As per the model piloted
(**) Reach out to more farmer in same time & cost

Selected for Start Up Conclave for Smart Agriculture, Niti Ayog at National Agri-Food Biotechnology Institute (NABI), Mohali, Punjab

Sustainable Farming | Real time Advisory | Farm Planning
Promotes enhanced visibility of crop health, impact quantification and better subsidy utilization

Rural Employment | Skill Building
Solution Architecture

Technology Involved – Android App on Calibrated Hardware

Image Processing, Machine Learning, Android OS, Cloud Computing, Visualization,
Remote Deployment Support

Working Principle

Refractometry, Titrimetry, Electrochemistry (in future version)
Easy to Use Device P-P-P

- **Prepare soil extract**
  - Mix soil with water (rain water or distilled water) with 1:2 ratio in volume (i.e., one cup of soil with 2 cups of water) and mix it thoroughly
  - Wait 10-30 min for setting soil in bottom and clear water separation (wait at least upper layer of soil extract is clear. If not clear in 30 minutes of time, filter by normal filter paper)
  - Transfer 4 ml of clear soil extract to the test tube with dropper

- **Put reagent inside the test tube**
  - Cap the test tube & mix gently until the chemical is dissolved
  - Wait for specified time (depending on the type of the tests)

- **Press ‘Analyze’ button in the device**
  - Result displayed on the screen

**Quality System Adopted:** ISO 9001:2015

RefRACTOMETRY, TITRIMETRY, ELECTROCHEMISTRY (in future version)
Easy Support Model

- Continuous improvement through Machine Learning algorithm
- Free upgrade of **Test App** through internet based distribution system (similar to Google Distribution)
- Remote call centre support
  - Call & eMail based
  - Currently based on English, Hindi & Bengali
- Additional Support to soil health report generation & other analysis
Recognitions & Media Mention

- Selected for Start Up Conclave for Smart Agriculture, Niti Aayog
- Electrify Most Impactful Social Venture
  - JSS STEP – Noida, incubator run by JSS Karnataka
  - Supported by Department of Science & Technology, Govt of India
- Winner of Bengalathon 2018
  - Govt of West Bengal, NASSCOM
- Top 8 Solution Patna Ideathon
  - Govt of Bihar
- Top 100 Social Enterprise
  - Action for India 2018
- Winner Infocomm Future Leadership 2018
  - ABP Initiative
Thank You

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