

SOIL MOISTURE SENSING

YUKTIX GREENSENSE

YUKTIX TECHNOLOGIES PVT. LTD.





ABOUT YUKTIX

Yuktix is a DIPP (Department of Industrial promotion and Policy) recognized startup and a registered MSME working to create indigenous remote monitoring and sensor analytic solutions for agriculture.

OUR MISSION

WEATHER
PREDICTION



DISEASE
PREDICTION



SAVE WATER
IN IRRIGATION



INCREASE
PRODUCTION



REDUCE
LOSSES





ACHIEVEMENTS SO FAR



Yuktix was among the 11 startups which were selected by **BRINC Poland Prize** (Hardware & IoT) & Scale-Up (Industrial IoT) accelerator programs.



Yuktix is part of **second cohort of 14 Centre for Cellular and Molecular Platforms (C-CAMP)** Bio-startups under the Karnataka Bio-Startup Advancement Program (K-SAP BIO 50).



Yuktix was part of a **top 10 IoT startups delegation participating in CEATEC 2016**, the largest exhibition and trade fair for advanced electronics and IT in Japan. The trip was organized by METI (Ministry of Economy, Trade and Industry in Japan).



Yuktix was **runner up of India-Israel Innovation Bridge 2018** under the Agriculture Challenge 1: Solution for reducing post harvest loss and improving market linkage.



The Idea2PoC is a scheme of Dept. of IT, BT and S&T, Govt. of Karnataka. Yuktix **received** a grant for developing wireless sensor network for agriculture monitoring idea into a viable PoC (proof of concept)



Yuktix was **selected as one of the top 50 start-ups** by NASSCOM under Emerge 50 2015 for Agriculture disease prediction system using IoT devices.



Yuktix **was part of the first cohort of Marico Innovation foundation** first agriculture focused program – #Innovate2Cultivate. Via the program, start-ups got access to farmers and their farms, business and investment opportunities.



Yuktix was **runner up of India-Israel Innovation Bridge 2018** under the Agriculture Challenge 1: Solution for reducing post harvest loss and improving market linkage.

MEDIA HIGHLIGHTS





WHAT WE DO?

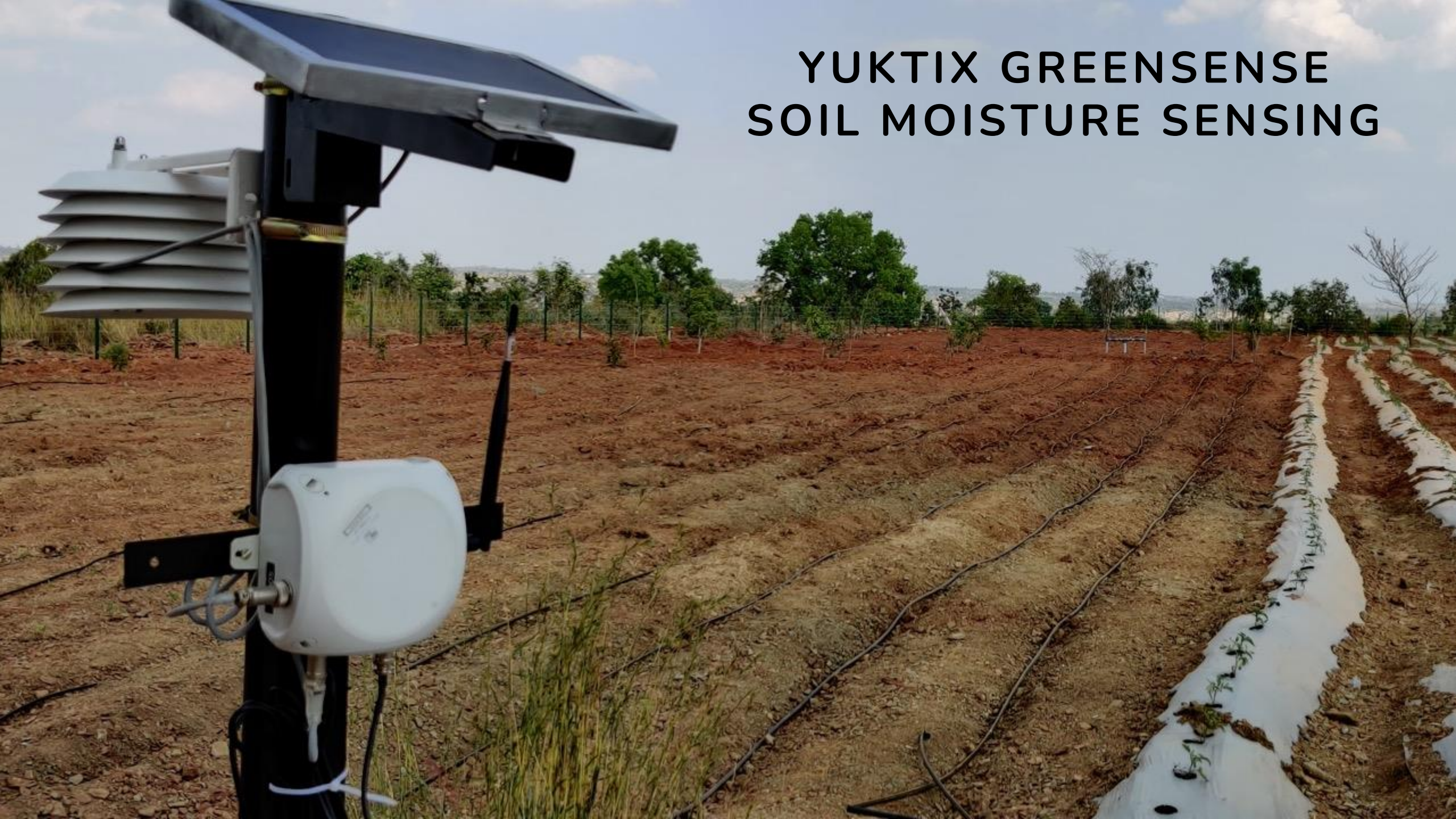
We are creating sensors based Agri-intelligence systems to assist growers in increasing productivity and reducing resources to create a sustainable and food secure world.

- ▶ Creating Next Generation infrastructure to collect and analyse data from agriculture based sensors.
- ▶ Make Ubiquitous computing using sensors easy.
- ▶ IoT & Cloud based solutions.
- ▶ Low power hardware with provide modern networking and smart sensing.

🐦 GreenSense Digital Assistant for farm Productivity and Risk Management.

- ▶ Next Generation Sensor platform – Proprietary IOT Hardware (ankiDB™ micro) & Software (ankiDB™ cloud).
- ▶ Devices and Sensors provide crop specific AI generating insights to reduce agriculture risks such as disease forecasting, watering forecasting, fertilizer requirement forecasting, plant water stress.

YUKTIX GREENSENSE SOIL MOISTURE SENSING





FEATURES

- ▶ Solar powered wireless device with battery back-up.
- ▶ Easy to install, maintain and operate.
- ▶ Sensor – Soil Volumetric Water content sensor (Resolution: $0.001 \text{ m}^3/\text{m}^3$), Air temperature and humidity
- ▶ Sensor (Temperature, Humidity, Soil Moisture Sensor)
- ▶ Irrigation advisory and planning.
- ▶ GreenSense – Wireless sensor network – deploy multiple GreenSense nodes with Yuktix solar powered wireless gateway.

SOIL VWC SPECIFICATIONS

- ▶ **VWC Range:**
Mineral soil calibration: $0.00-0.64 \text{ m}^3/\text{m}^3$
Soilless media calibration: $0.0-0.7 \text{ m}^3/\text{m}^3$
Apparent dielectric permittivity (ϵ_a): 1 (air) to 80 (water)
- ▶ **Resolution:**
 $0.001 \text{ m}^3/\text{m}^3$
- ▶ **Accuracy:**
Mineral soil calibration: $\pm 0.03 \text{ m}^3/\text{m}^3$ typical in mineral soils that have solution EC < 8 dS/m

Medium specific calibration: $\pm 0.01-0.02 \text{ m}^3/\text{m}^3$ in any porous medium
Apparent dielectric permittivity (ϵ_a): 1–40 (soil range) , $\pm 1 \epsilon_a$ (unitless)
40–80, 15% of measurement

Smart Irrigation

YUKTIX ankiDB™

4G

Solar Panel

GATEWAY

Modem

Soil Moisture
Soil Temperature

Air Temperature
Humidity

Solenoid
Valve

- a) Sensor Based Irrigation
- b) Schedule Irrigation Timing
- c) Remote Irrigation
- d) Real-time Data
- e) Notification Over SMS & E-Mail
- f) Visualisation For Trend Analysis
- g) Real-time Weather Information

Field One

Sprinkler 1 ON OFF Sprinkler 2 ON OFF

Sprinkler 3 ON OFF Sprinkler 4 ON OFF

Field Two

Sprinkler 1 ON OFF Sprinkler 2 ON OFF

Sprinkler 3 ON OFF Sprinkler 4 ON OFF

Field Three

Sprinkler 1 ON OFF Sprinkler 2 ON OFF

Sprinkler 3 ON OFF Sprinkler 4 ON OFF

Hill #1

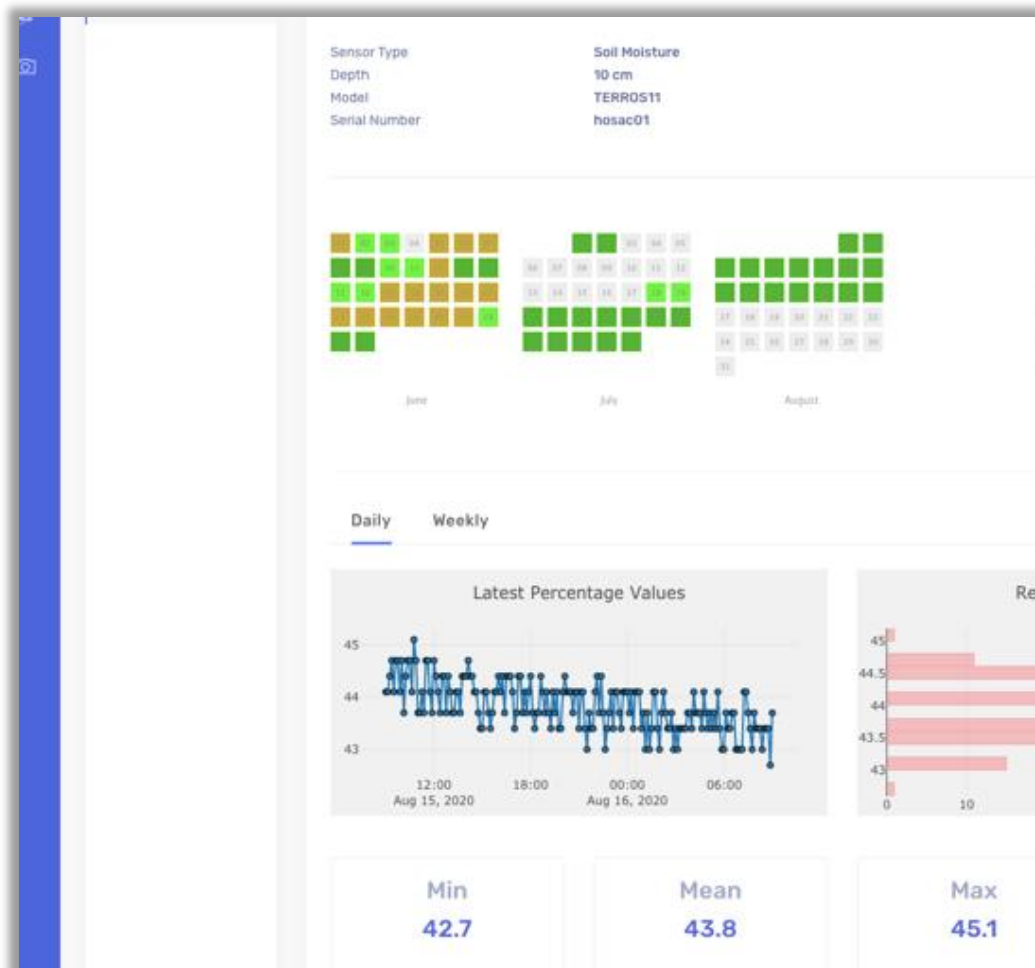


Disease Prediction

- 1) Lowest growth in a diversity test in topworking industry
- 2) It is a long established fact
- 3) Reader staff always be distracted



IRRIGATION ADVISORY



Sensor variation between devices

Reset

Selectd Serials

gvaws04

gvaws03

gvaws02

Start Date

2020-10-04

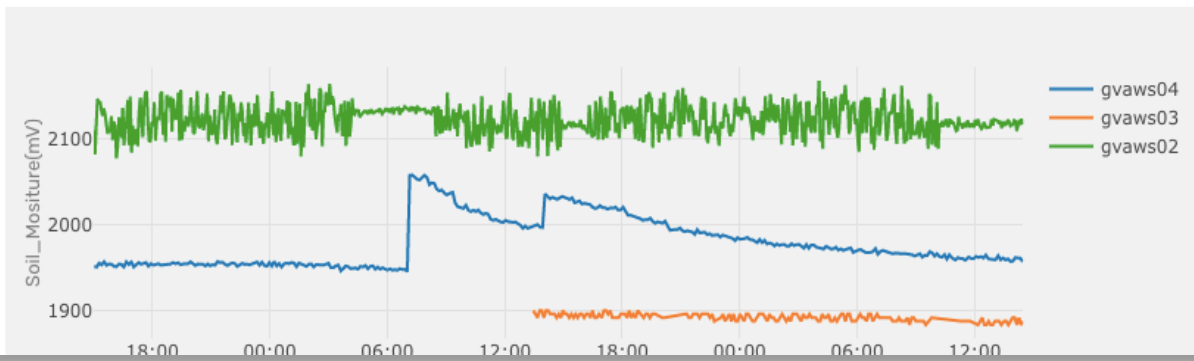
End Date

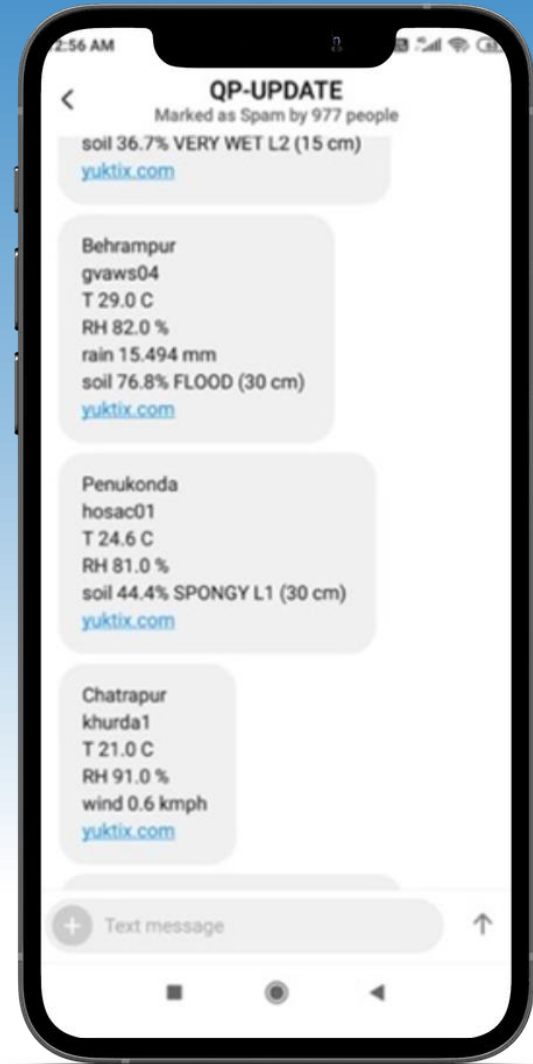
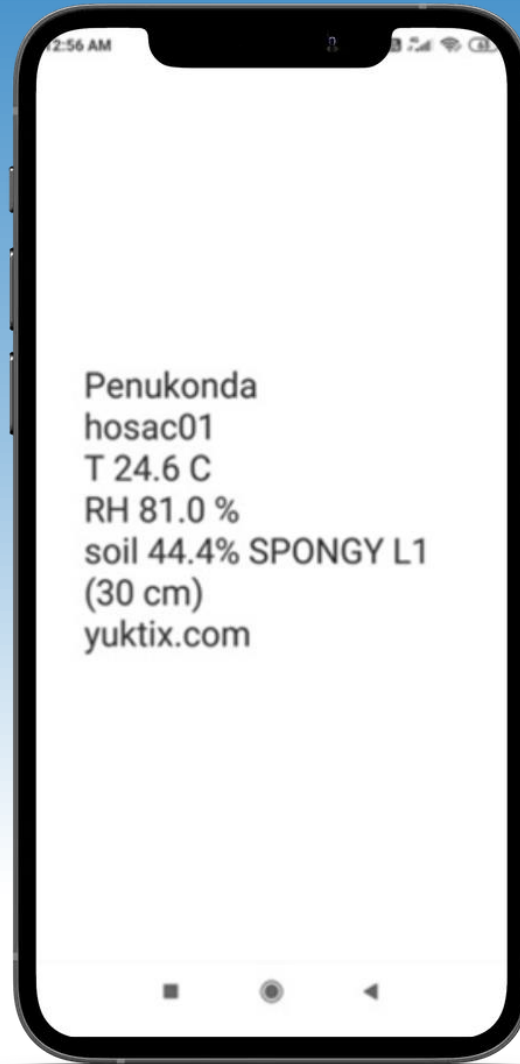
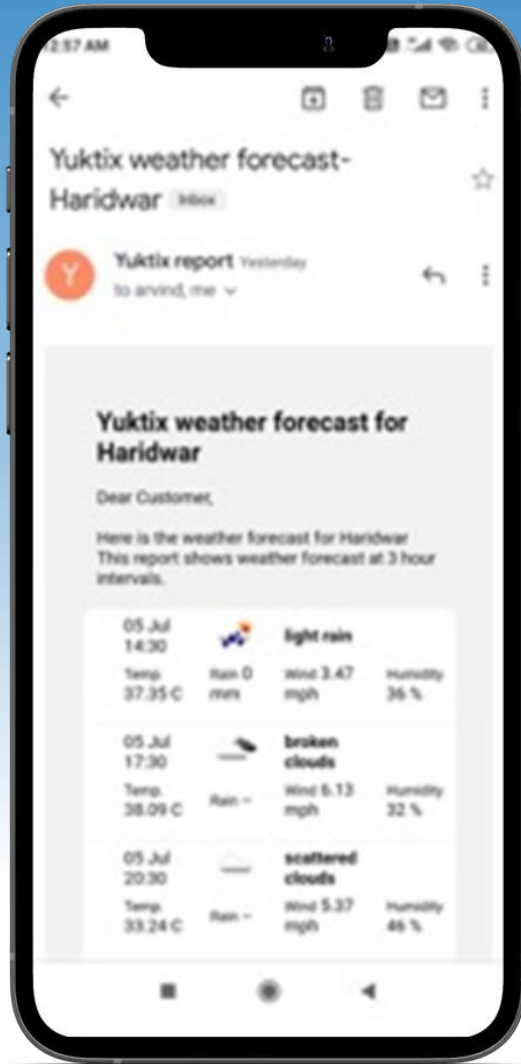
2020-10-06

Next

Select Channel

Soil_Mositure







OUR TEAM



Rajeev Jha

Founder
IIT Kanpur, IIM
Bangalore

19+ experience in
software domain
Ex-Oracle, Citrix,
AOL and couple
of other startups



Shailendra Singh

Co- Founder
UPTU

8+ experience in
embedded domain
Previously worked in
Thinvent, Silverline
design



Dr. BNS Murthy

Advisor

National
Horticulture
Mission of India
Principle Scientist
at Indian council of
Agriculture
research



Dr. Sridhar

Advisor

Indian council of
Agriculture
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Bangalore.



Girish Kshrisagar

Advisor

Ex-Bayer. Agriculture
Industry Expert with
30+ years of
experience.



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