DRIP IRRIGATION SYSTEM

Majority of population being in the Agriculture sector, economy depends on natural resources like Soil & Water. Drip irrigation is an efficient water & nutrient delivery technique to supply water, fertilizer slowly to the roots zone of plants through drippers, which reduces percolation loss, water erosion, evapotranspiration, run off & foliar diseases. So the method discussed uses the data provided to analyze utilization of IoT for drip irrigation .

The proposed system uses **Raspberry Pi** to collect the raw data given by sensors to automate the amount of water supplied, through Android app. Here Soil moisture, temperature sensor DHT11,relay module& water flow sensor is used.DHT11   shows the changes of temperature & humidity of atmosphere & gives signal to **Raspberry Pi**.Soil moisture sensors placed on the roots zone of plant.When the soil gets dried the soil moisture content of the agriculture field is detected as less than the threshold value then the microcontroller turns on the pump through relay module to irrigate through drips.When enough water is present, moisture level reaches the threshold value & pump automatically stops watering. The extra water present in pipe returns back to tank through feedback control system.So this is the way of automated triggering the drip service ON/OFF using an Android App. Water flow sensor is used to find out leakages in the pipe. Overall IoT devices collect raw data from ground, atmosphere and forwarded this to cloud through **Raspberry Pi**. Cloud sends this information back to displayed in an Android app. With the finger tip the pump can be ON/OFF based on information available on display.

This results in saving water, fertilizer & energy by continuous monitoring of the field. It also reduces disease & weed incidence .Resulting in high yield and sustainability in use of Water. Automated control features with least electronic technology using microcontroller which is effective, reliable & cost efficient.

Today most of the drip irrigation system used in arid, hot or windy areas are operated manually. But by the use of this automated drip irrigation system in our areas, in coming years it not only minimizes the manual work , water & fertilizer requirement but also doubles the yield hence doubling the farmer`s income in saving time, cash & labour of the farmer. And this IoT controlled system updated our farmers about the status of drippers regularly.