

Modified Agriculture – Precision Agriculture

Precision Agriculture (PA)

- Specific production over particular place, from foot to foot
- Data collection and decision making for small pieces of the field
- identifying of particular part of the field for data collection and analysis for precise and reliable decision making
- Homogenous parts with significant differences and parts of the uniform network
- Decisions and data for one part don't apply to another parts of the same field.

Spatial variability

- Demarcation of Spatial variability & acknowledge and cultivate
- Identify procedures for specific areas of the field based soil properties, micro relief, etc,
- Monitor plants & its growth parameters and apply required quantity of water, fertilizer & pesticide soil moisture, nutrient

Prepare Maps

- Coordinate systems
- Rows and columns in ordinary table.
- Combination of the letter and number (coordinates) is exact address/position of the cell in the table

Tools of precision agriculture

- Global positioning system (GPS)
- Geo-informational system (GIS)
- Remote Sensing (RS)
- Intelligent Devices and Implements (IDI)
- Computers

Precision Agriculture

- GPS Guidance and Auto-steer
- Section Control on Sprayers
- Row Control on Planters and Seeders
- Yield Monitoring
- In-field Sensing

Implications in Precision Agriculture

- Real-time Plant Fertilizer Requirements to Maximize Yield &
- Increased Use of fertilizer/pesticide efficiency & Reduce Total Application
- Early Yield Prediction
- Precision Desiccant Application

Issues

- Additional Application Costs – machinery, surveillance
- Another Pass of Field
- Weather Issues Could Prevent Second Application

Unmanned vehicle

- Inventory of Nursery Tree Crops
- Crop Stress
- Livestock Observation
- Monitoring Rangeland Condition

Issues

- Airspace Operational issues
- Image Processing Complexities
- Difficulty of Operation @ all times

As agriculture is widespread in space and time and requirement monitoring and data collection drains our resources.

Production cost per unit produce moves up as well food cost.