

Computer Applications in Agriculture



1. Weather Prediction

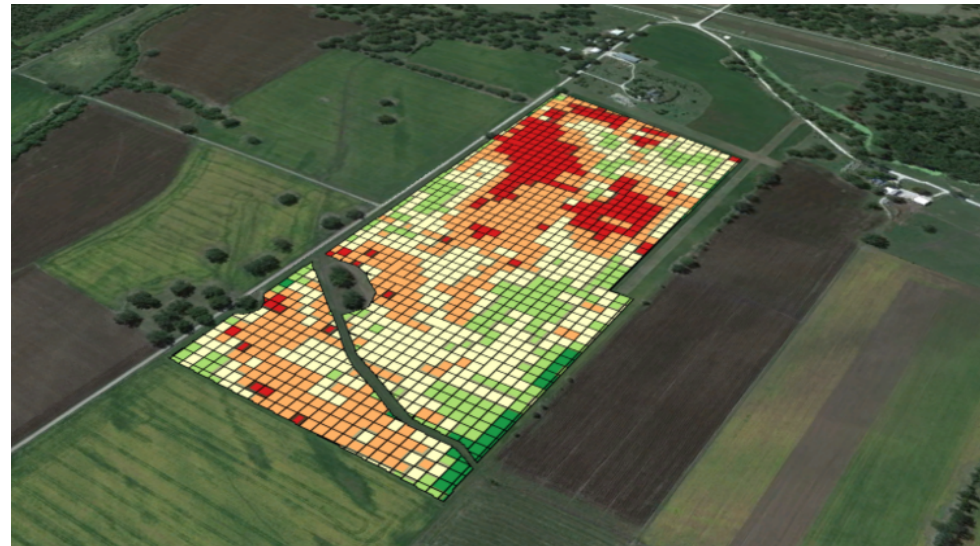
2. Record Keeping

3. Farmer Communication

4. Geographic Information System/ Remote Sensing

5. Automated Farm Equipment

6. E-Agriculture



1. Weather Prediction

- Right amount of rain and sun light is important for better production
- Due to computerization weather forecasting become more easier
- For weather prediction forecasters may use observations taken from satellites (more than two hundred million observations per day) to predict in better way.
- These observations are recorded in a computer
- Then used for prediction by applying computer based models
- For predictions forecaster uses data based on temperature, pressure, precipitation & etc.
- The models are based on past weather events as well as local geography (elevation, high or low pressure, etc.)
- The farmers in turn use the forecast predicted by the computerized weather model to gauge how much rain will be coming in, as well as how dry the upcoming weather will be, amongst other factors.

2. Record Keeping

- Computers play an important role in record keeping in the agriculture field
- Farmers may use computers to keep track of information such as budget records, animal health, equipment inventories, and maps of land etc.
- Livestock farmers can use computer technology to track the health and status of each of their animals
- There are various software and programs to organize and keep record of different information for the farmers
- Farmers need to have accurate records for their business to operate smoothly
- Computers allow farmers to organize this information that is easily accessed and is presented in a clear, organized manner.
- Farmers use maps to plot areas of land with certain characteristics that might affect crop yield
- Computers are extremely important and a conducive tool to farmers which aide in the process of running their farms more efficiently and therefore making their products more assessable to consumers

3. Farmer Communication

- Using modern technology, farmers can quickly communicate questions about adapting to sudden weather changes or other concerns
- Applications and devices have improved accuracy, such that research related to the supply chain, item tracking, increasing yields, etc. is fast and convenient.
- With the rise in Global Food Market, Information and Communication Technology (ICT) has become increasingly important for agriculture.
- An ICT is a tool or application that allows the exchange of data through transmission. ICTs can include anything from a small device such as mobile phones, or nanotechnology for food safety, or even satellite imagery.
- Small-scale farmers can benefit from understanding developments in global agriculture.
- small-scale farmers may seek information in the following areas: Markets & Pricing, Plant Varieties, Farm & Production Techniques, Processing & Distribution, Advancements in Tools & Equipment

4. Geographic Information System/ Remote Sensing

- According to the United States Environmental Protection Agency, Geographic Information Systems is "a computer system that allows you to map, model and analyze large quantities of data within a single database according to their location" GIS allows you to:
 - >Construct maps
 - >Combine information
 - >Make scenarios
 - >Make scenarios
 - >Present ideas
 - >Develop solutions
- GIS is base for precision agriculture, which evaluates and assesses land. For this purpose system gather information like:
 - > Soil conditions
 - >Drainage conditions
 - >Slope conditions
 - >Soil pH
 - >Nutrient status
- These organizational systems allow farmers to have insight into conditions that could affect their crops and their success
- Before the use of GIS and precision agriculture, farmers lacked control about essential information related to fertilizer application and problems with drainage, insects, & weeds.
- GIS improves communication as farmers can access the information for higher yield



5. Automated Farm Equipment

- Farms have been using automated farming equipment for a long time to boost up their production
- Companies are working to provide farmers with affordable automated farming machines to fulfill their need successfully.
- Looking at the history of farming, crop-growing has come a long way- from physically exhausting to machines to the hard work
- Instead of appreciating the hard work from the farmer, we now see appreciation in numbers and size of fruits and vegetables
- We take advantage of technology to do the hard work, and consequently, hold less appreciation for the finished product

6. E-Agriculture

- E-Agriculture is a community of people devoted to the exchange of information and ideas to work towards rural and agricultural development
- The mission of E-Agriculture is to serve as a catalyst for institutions and individuals in agriculture and rural development to share knowledge, learn from others, and improve decision making about the vital role of ICTs to empower rural communities, improve rural livelihoods, and build sustainable agriculture and food security
- Information is shared whenever there is demand for such information. For example, a farmer wants to begin exporting crops, but is unsure of the market standards regarding sustainability. By communicating their demand for knowledge of such standards via computer, (be it on forums, online programs, or e-mail), the entrepreneur is likely to receive the information. This transaction is all run through the community of E-Agriculture