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Digital General Crop Estimation Survey (DGCES)

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Why in news?

Digital General Crop Estimation Survey (DGCES) has been initiated *to calculate yield based on scientifically designed Crop Cutting Experiments* for all major crops across the country.

These initiatives are expected to provide near real-time and reliable data directly from the field, which enables more precise estimations of crop production.

About:

The "Digital General Crop Estimation Survey (DGCES)" is a *nationwide initiative aimed at precisely assessing crop yields* across a variety of crops.

This program *utilizes a meticulously crafted survey methodology* rooted in the *principles of crop cutting experiments*.

The introduction of the GCES mobile application and portal has ushered in a transformative era for recording Crop Cutting Experiment (CCE) results directly from the field.

With innovative features such as GPS-enabled photo capture and automated plot selection, this technological advancement significantly enhances transparency and accuracy within the system.

A crop cutting experiment (CCE) is a *technique used to estimate crop yields and other information by sampling small plots within cultivated fields*. The experiment involves marking a plot of a specified size in a selected field, harvesting, threshing, and weighing the produce.

The *CCE was developed in India* by pioneers in sampling and survey design, including *Dr. P.V. Sukhatme of ICAR-Indian Agricultural Statistics Research Institute*.

General Crop Estimation Survey:

The General Crop Estimation Survey (GCES) is a *nationwide initiative that estimates crop yields across India* by conducting crop cutting experiments

The survey covers around *68 crops in 22 states and 4 union territories*

The GCES's primary objective is to provide reliable estimates of the average yield of major food and non-food crops for these states and union territories

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The GCES uses a stratified three-stage random sampling design:

- **Stratum:**Tehsil or taluka
- **First stage unit:**Village
- **Second stage unit:**Field growing the specified crop
- **Ultimate unit:**Plot, usually 5m x 5m

The experiment involves *marking the plot, harvesting, and weighing the produce from it*In some cases, the produce may be stored and dried to determine the weight of the dried produce

The **GCES also includes a mobile application and web portal** that allows users to record Crop Cutting Experiment (CCE) results directly from the field

The app's features include:

- **Geo-referencing:**Allows users to draw the boundary of the experimental plot and upload photos of the plot and crops
- **Transparency and accuracy:**Ensures transparency and accuracy of data

What is geospatial referencing ?

It is the **process of associating geographic or spatial information** with data, typically in the form of **geographic coordinates (latitude and longitude)** or **other spatial reference systems**. This allows data to be tied to specific locations on the Earth's surface, enabling it to be displayed on maps, analyzed in geographic information systems (GIS), or used for various geospatial applications.