



# Genes to Increase Grain Size of Sorghum

## Why in News

Recently, as per a report from the University of Queensland (UQ), Australia, **genes that can increase the grain size of sorghum** have been discovered.

## Key Points

### ▪ About:

- As many as **125 regions in the sorghum genome have now been identified** where **variation in the DNA sequence was associated with grain size** and response to environmental conditions.
- **New variants** have also been identified that are **capable of doubling grain weight**.

### ▪ Significance:

- Bigger grain size can **improve the usage value of the crop**. Larger grains make it **more digestible** for both people and animals and improves processing efficiency.

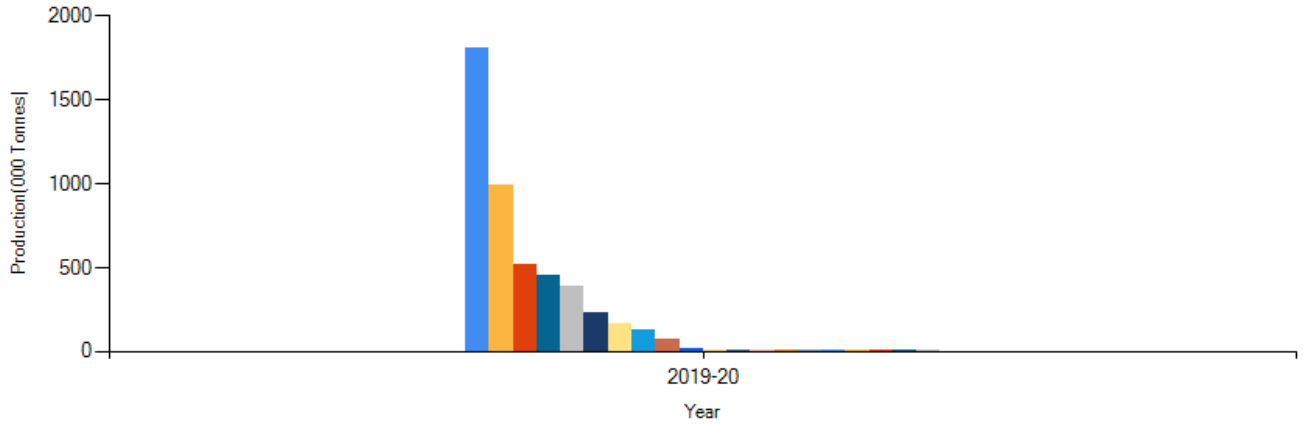
### ▪ Sorghum:

- It is a **versatile grain crop used for human consumption, fodder and bioenergy** generation.
- The grain is popular across the world because it has a **low glycaemic index**, is **gluten-free and nutritious**.
  - The lower the glycemic index of a cereal, the **lower is the relative rise in blood glucose level** after two hours of consuming it.
- The **variety of the crop found in India is called jowar**. It is said to have its origin in the country and is one of its most important food and fodder crops.
  - Jowar has a dedicated **All-India Coordinated Research Project since 1969**.
- Sorghum plants are **very hardy and can withstand high temperature and drought conditions**.
- It is well adapted to **semiarid regions** with a **minimum annual precipitation of 350-400 mm**. It is grown in areas that are **too hot and dry for growing maize**. In India, the main sorghum belt receives an annual rainfall ranging from **400-1000 mm**.
- It can grow on a wide range of soils. Medium to deep **black soils** are predominantly suitable for growing sorghum.

### ▪ States Producing Jowar in India:

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Top 10 States in Jowar Production



- State
- |             |                |                |              |           |          |                      |
|-------------|----------------|----------------|--------------|-----------|----------|----------------------|
| Maharashtra | Rajasthan      | Madhya Pradesh | Haryana      | Delhi     | Bihar    | West Bengal          |
| Karnataka   | Andhra Pradesh | Telangana      | Chhattisgarh | Jharkhand | Nagaland | Dadra & Nagar Haveli |
| Tamil Nadu  | Uttar Pradesh  | Gujarat        | Orissa       | Tripura   | Kerala   |                      |

Source: DTE

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