

ANALYSIS FOR CROP YIELD PRODUCTION IN INDIA

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UNDERSTANDING CROP PRODUCTION VARIABILITY IN INDIA

- **CONTENT:** IN A COUNTRY WHERE AGRICULTURE IS THE BACKBONE OF THE ECONOMY, THE YIELD OF CROPS SHOWS SIGNIFICANT VARIABILITY. FACTORS SUCH AS CLIMATE CHANGE, SOIL QUALITY, AND RESOURCE AVAILABILITY GREATLY INFLUENCE THESE YIELDS.
- **PURPOSE:** HIGHLIGHTING THE REAL-WORLD IMPORTANCE OF ADDRESSING VARIABILITY IN CROP PRODUCTION.

THE NEED FOR PREDICTIVE MODELING

- WHY PREDICT CROP PRODUCTION?
- **CONTENT:** ACCURATE PREDICTIONS CAN HELP STAKEHOLDERS—FROM FARMERS TO POLICYMAKERS—MAKE INFORMED DECISIONS. BY ANTICIPATING CROP YIELDS, WE CAN BETTER MANAGE RESOURCES, PLAN DISTRIBUTION, AND ENSURE FOOD SECURITY.
- **OBJECTIVE:** EMPHASIZE THE PRACTICAL BENEFITS AND IMPACT OF THE PROJECT

APPROACH: USING MACHINE LEARNING FOR PREDICTION

I DEVELOPED MACHINE LEARNING MODELS TO PREDICT CROP PRODUCTION ACROSS VARIOUS STATES AND DISTRICTS IN INDIA.

THE MODEL USES FEATURES LIKE STATE, DISTRICT, AND CROP TYPE TO MAKE ITS PREDICTIONS.

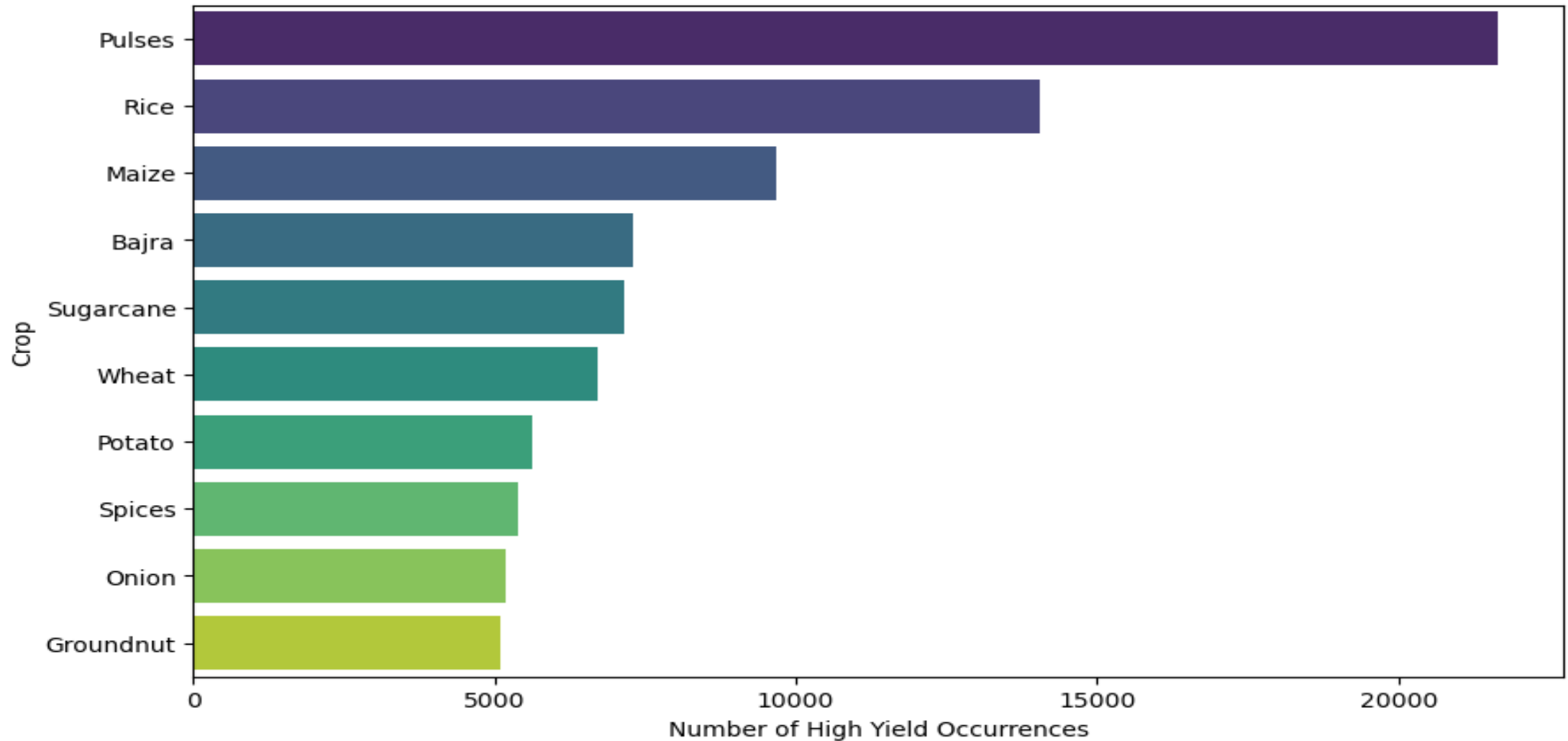
THIS MODEL WILL BE UPDATED REGULARLY AS DATA BECOMES AVAILABLE

NOTABLE INSIGHTS

CROPS WITH HIGH YIELD PRODUCTION:

- ✓ PULSES
- ✓ RICE
- ✓ MAIZE

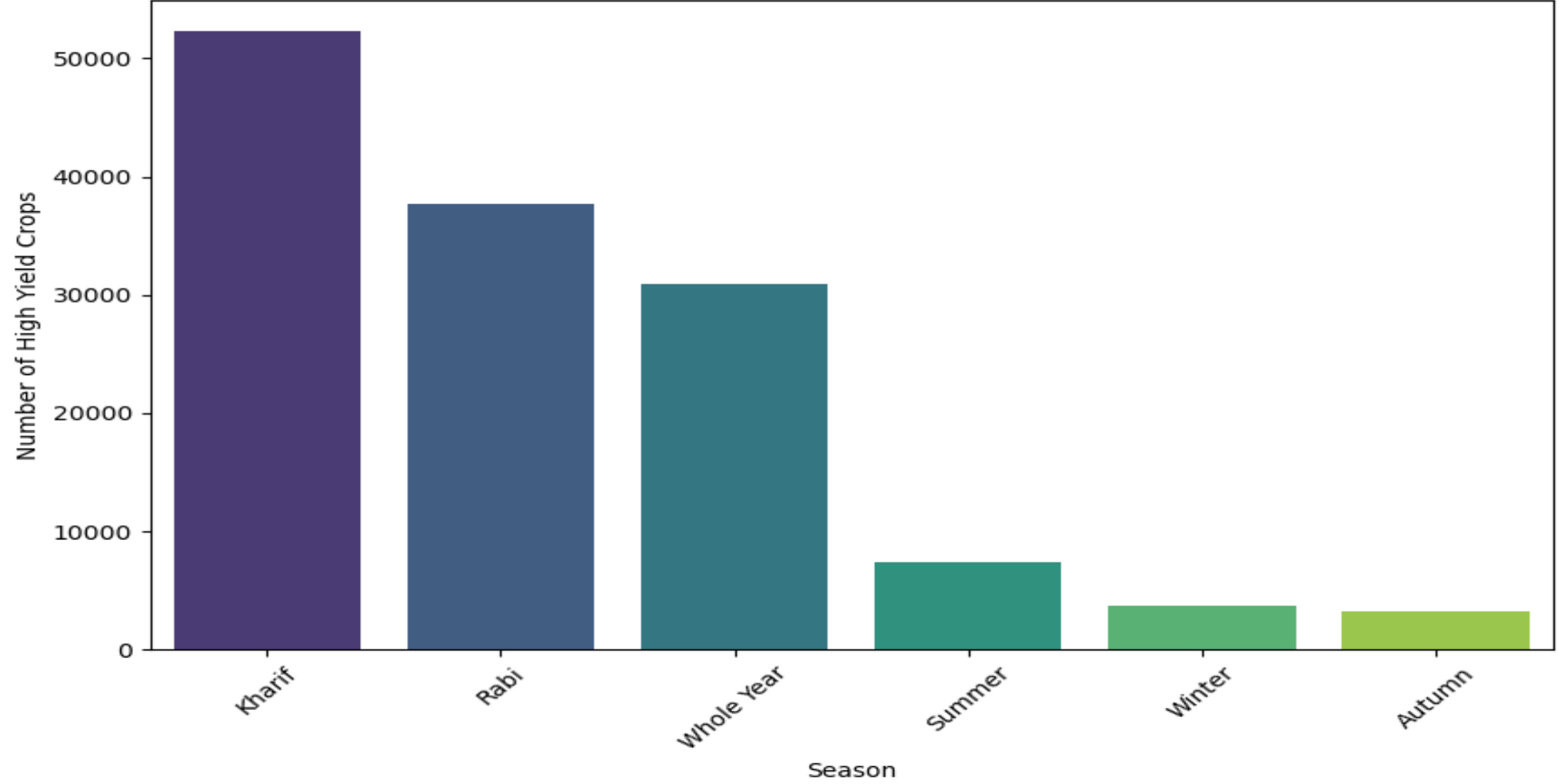
Top 10 Crops with High Yields



SEASONS WITH HIGH YIELDS

- SEASON WITH THE MOST HIGH YIELD PRODUCTION:
 - ✓ KHARIF (JUNE THROUGH TO OCTOBER)
 - ✓ RABI (BEGINS IN APRIL/MAY)
 - ✓ WHOLE YEAR/ THE REST OF THE YEAR

High Crop Production by Season



MODELS

- LOGISTIC REGRESSION

THE MODEL PERFORMED WELL, CORRECTLY CLASSIFYING 89% OF ALL INSTANCES. IT DID A GOOD JOB ON BOTH "HIGH" AND "LOW" CATEGORIES.

HOWEVER, THE SPECIFIC NEEDS OF YOUR APPLICATION SHOULD BE CONSIDERED TO FULLY EVALUATE ITS PERFORMANCE.

- **DECISION TREES MODEL**

- THE MODEL ACHIEVED PERFECT ACCURACY(100%), CORRECTLY CLASSIFYING ALL INSTANCES.
- THIS IS AN OUTSTANDING RESULT, INDICATING THAT THE MODEL IS EXTREMELY EFFECTIVE FOR THIS TASK.

RECOMMEDNDATION

- I RECOMMEND WE ADOPT THE DECISION TREES MODEL.
- THIS IS THE ROAD MAP TO RELIABLE RESULTS

THANK YOU FOR YOUR TIME!

ANY CLARIFICATION?

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END.