

Objective: To evaluate the performance of a machine learning model in predicting prices for various crops.

Dataset:

The dataset includes:

- Crop
- Date
- Real-Time Price (Actual Price)
- Prediction (Predicted Price)
- Deviation (Difference between Real-Time and Prediction)
- %Accuracy (Accuracy of the Prediction)

Data Overview:

The dataset covers dates for each crop with corresponding real-time and predicted prices. Data spans from 04/03/2024 to 13/03/2024 for corn, cotton, tomato, onion, and paddy, with potato data extending to 27/04/2024.

Analysis Approach:

1. Accuracy Calculation:

$$\text{Accuracy (\%)} = \left(1 - \frac{\text{Deviation}}{\text{Real-Time Price}}\right) \times 100$$

- Deviation and accuracy are computed for each crop and date.

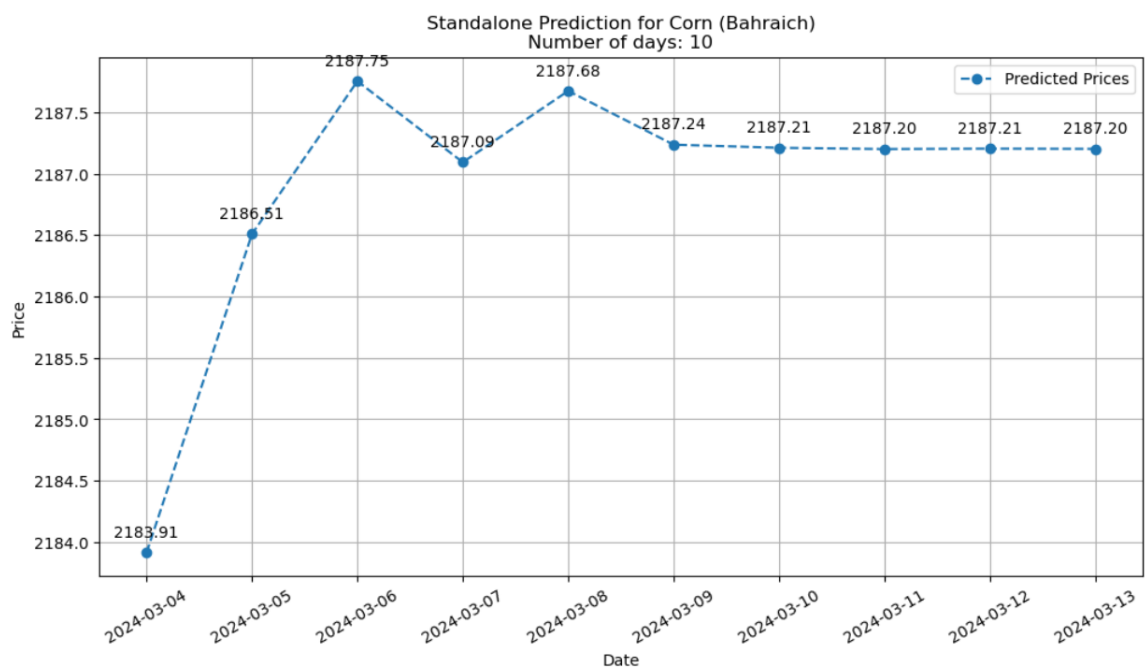
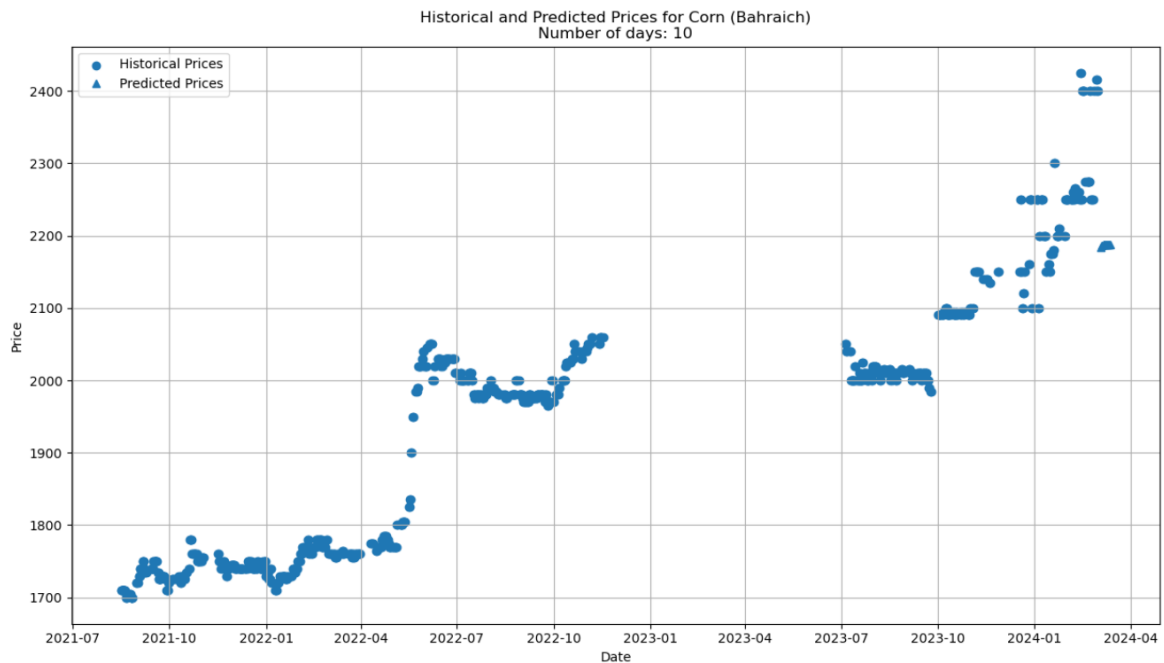
2. Descriptive Statistics:

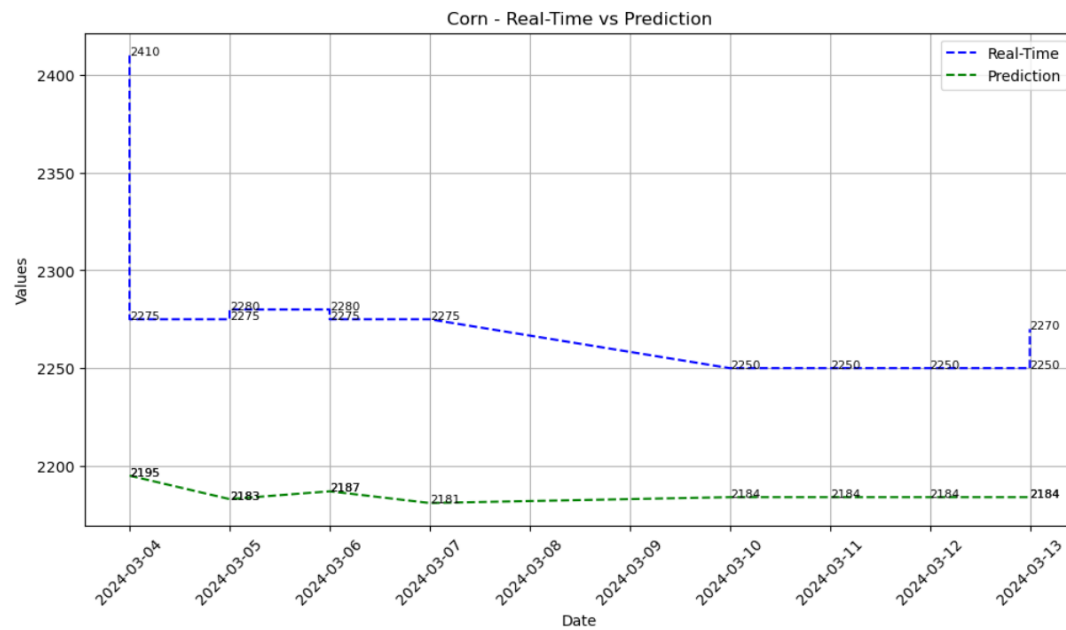
- Average real-time price, predicted price, deviation, and accuracy percentage are calculated for each crop.

Key Findings and Output:

1. Corn:

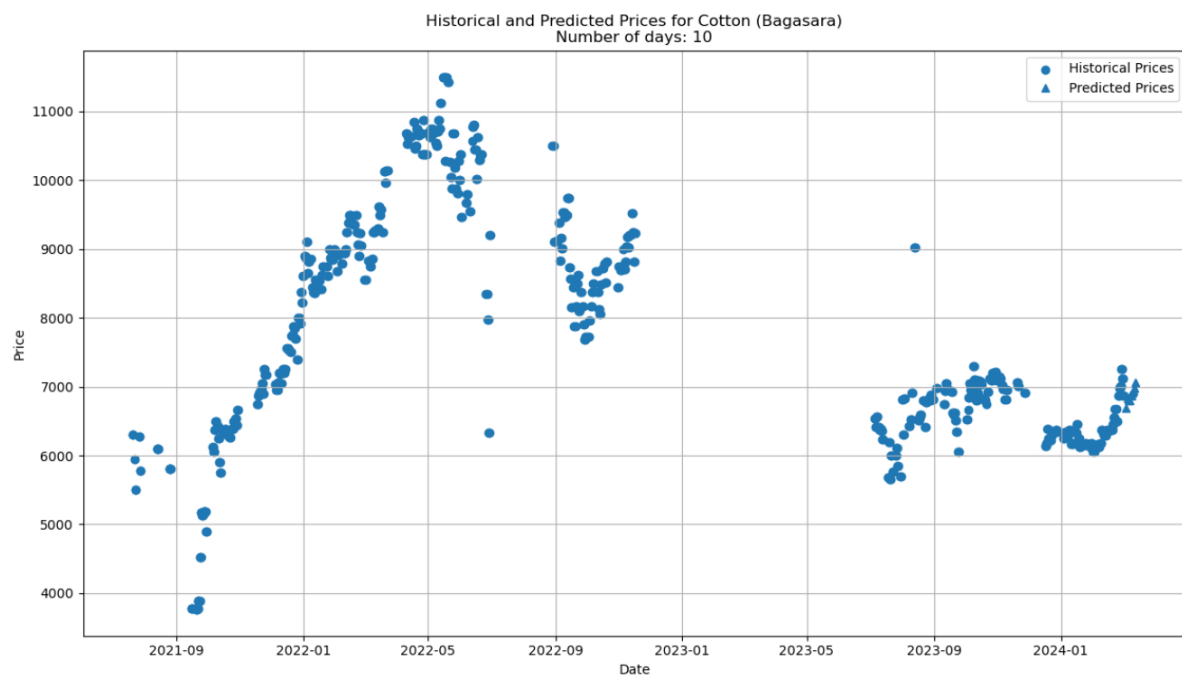
- Average Real-Time Price: 2278.33
- Average Predicted Price: 2186.50
- Average Deviation: 91.83
- Average Accuracy: 95.97%

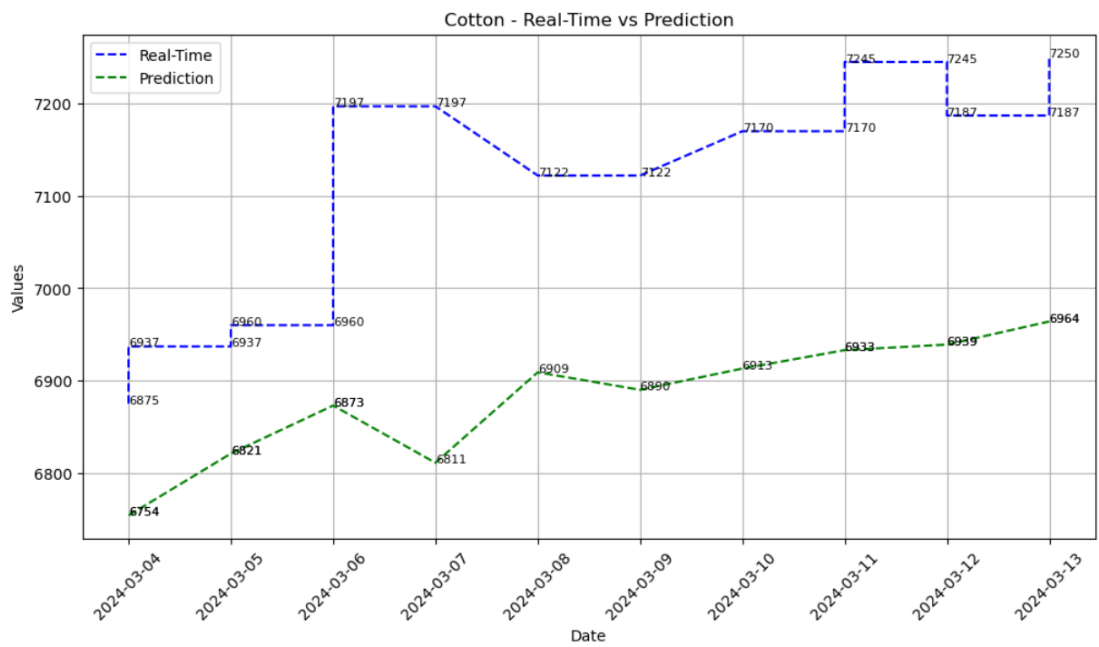
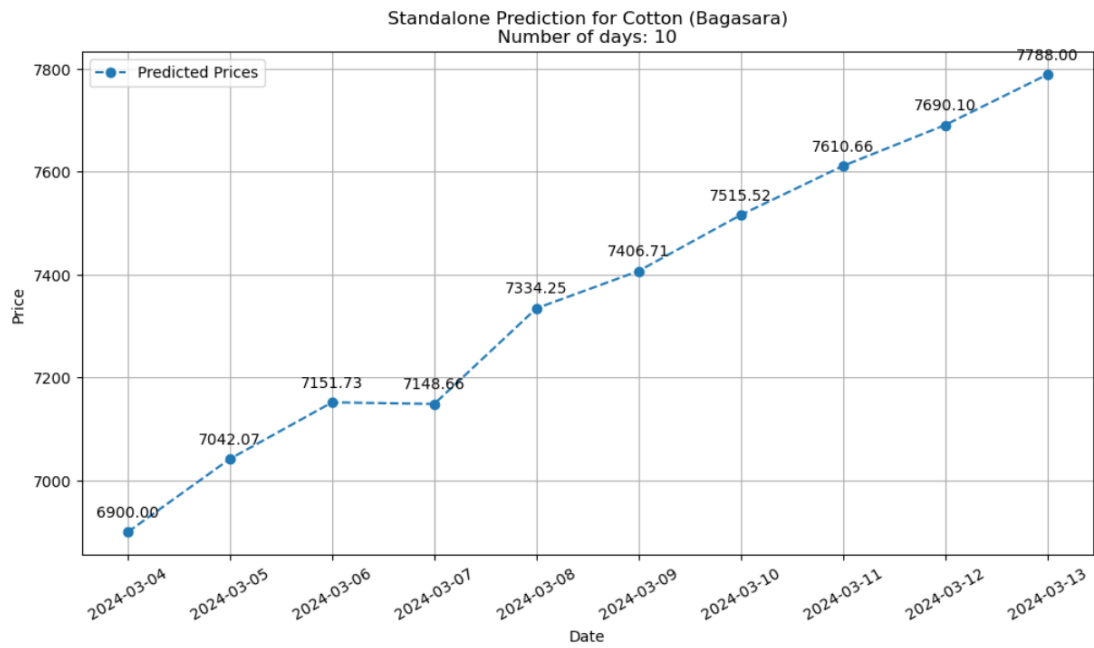




2. Cotton:

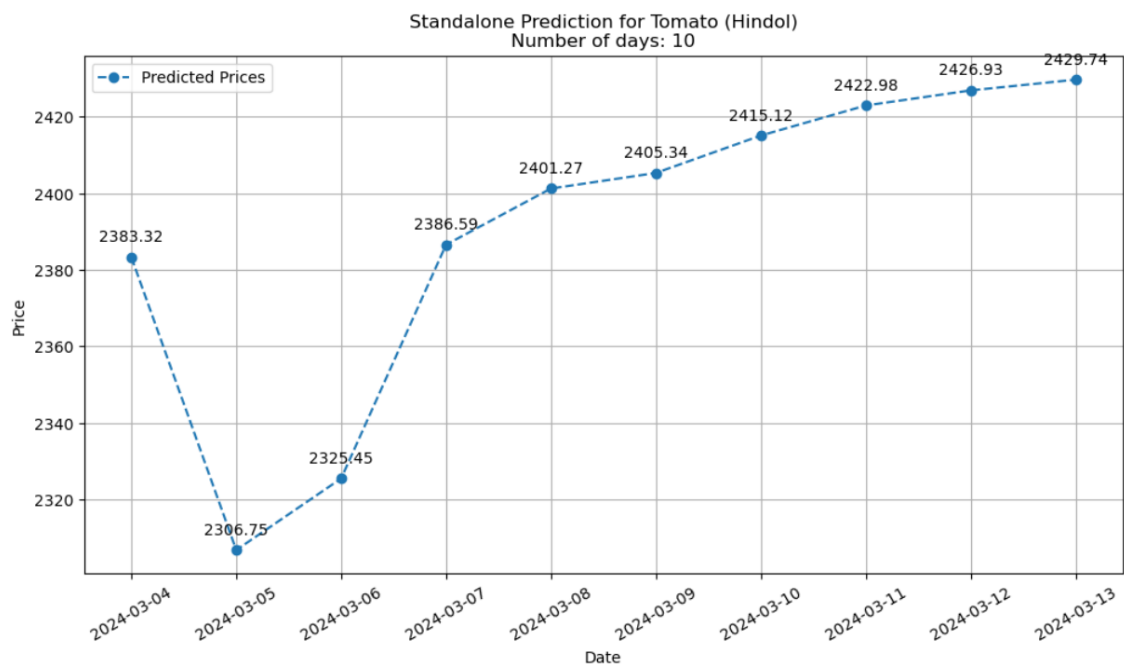
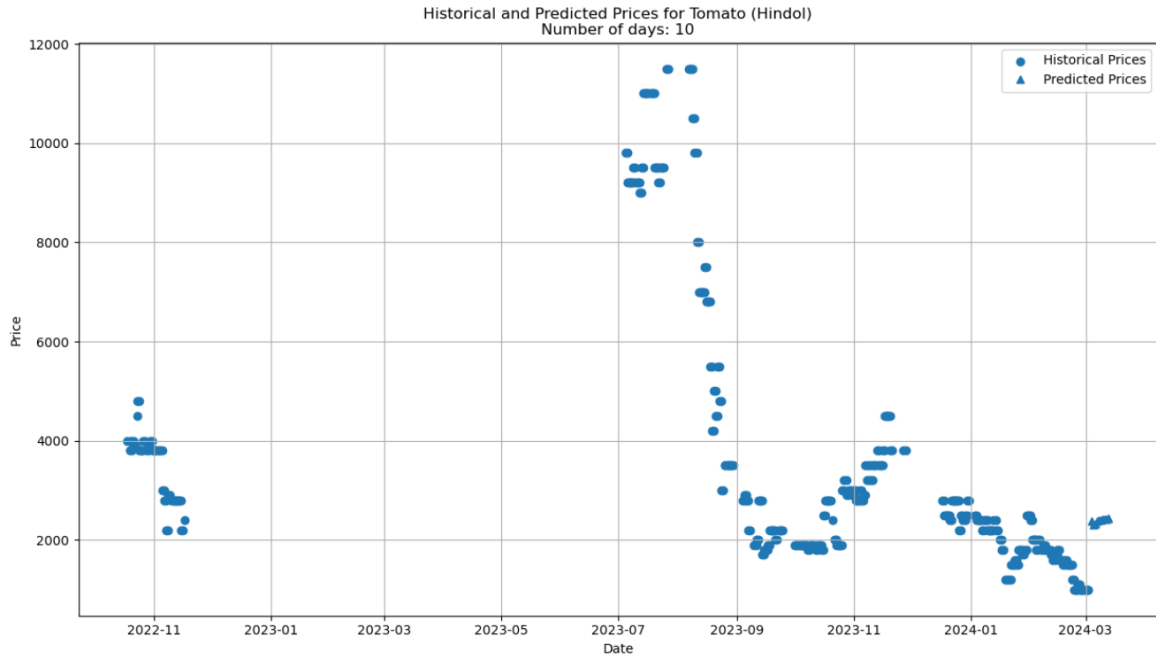
- Average Real-Time Price: 7110.06
- Average Predicted Price: 6881.13
- Average Deviation: 228.94
- Average Accuracy: 96.78%

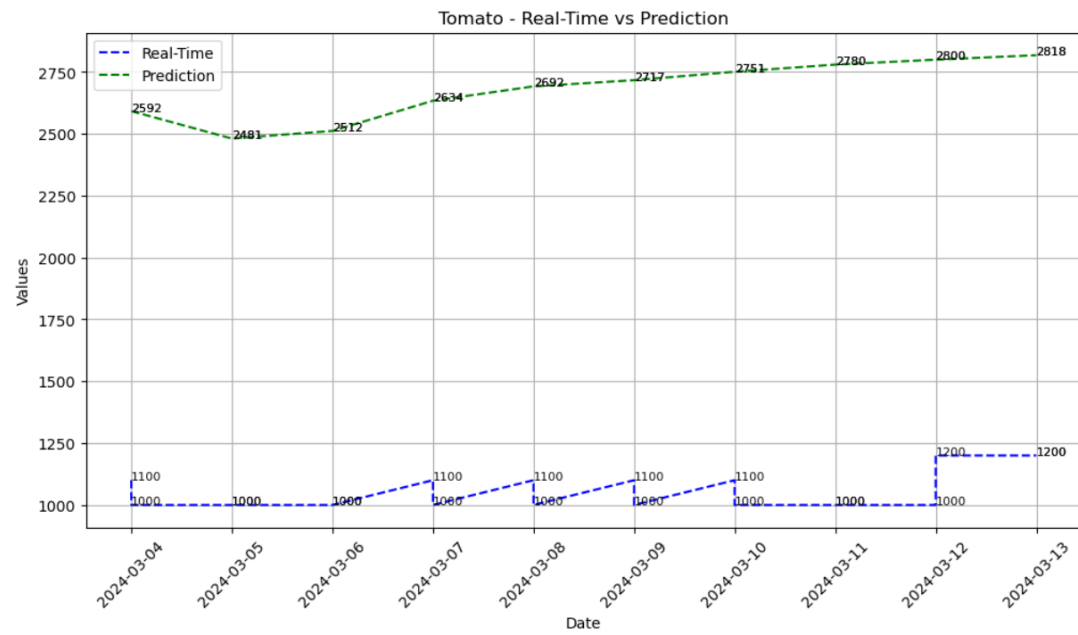




3. Tomato:

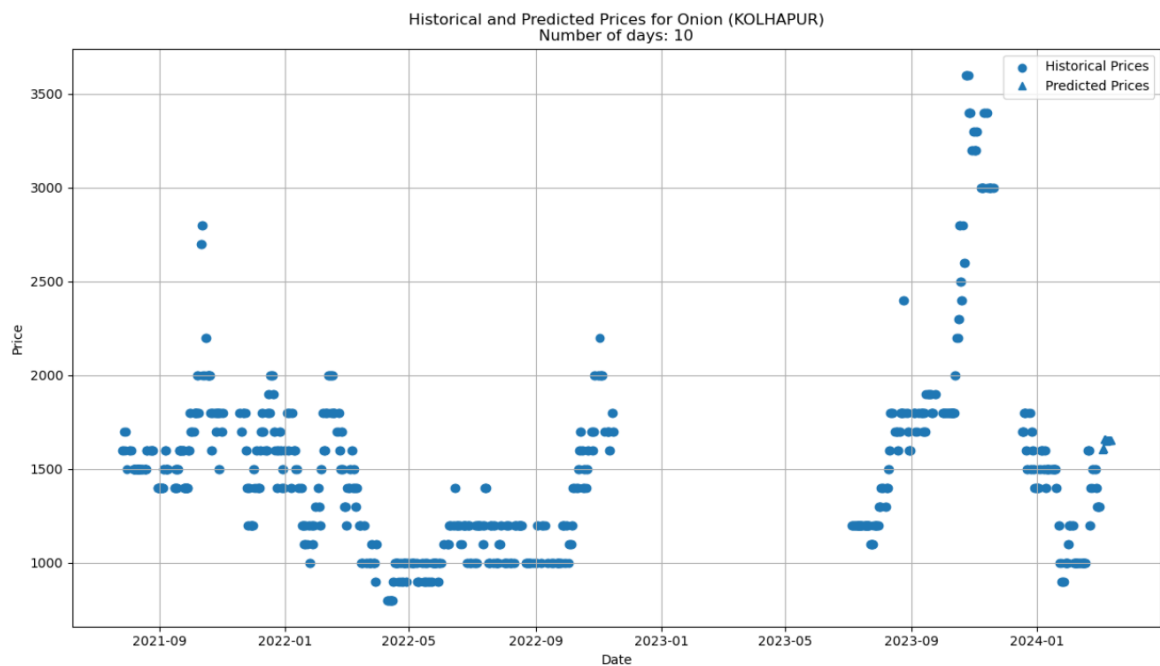
- Average Real-Time Price: 1055.00
- Average Predicted Price: 2678.30
- Average Deviation: 1623.30
- Average Accuracy: -53.87% (Poor model performance)

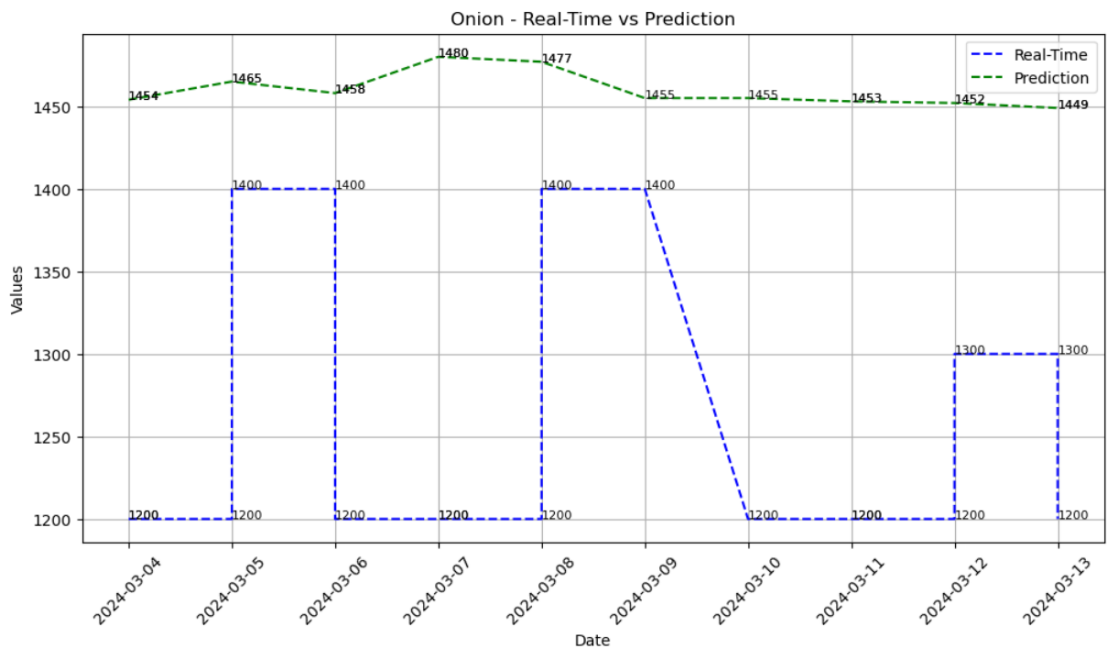
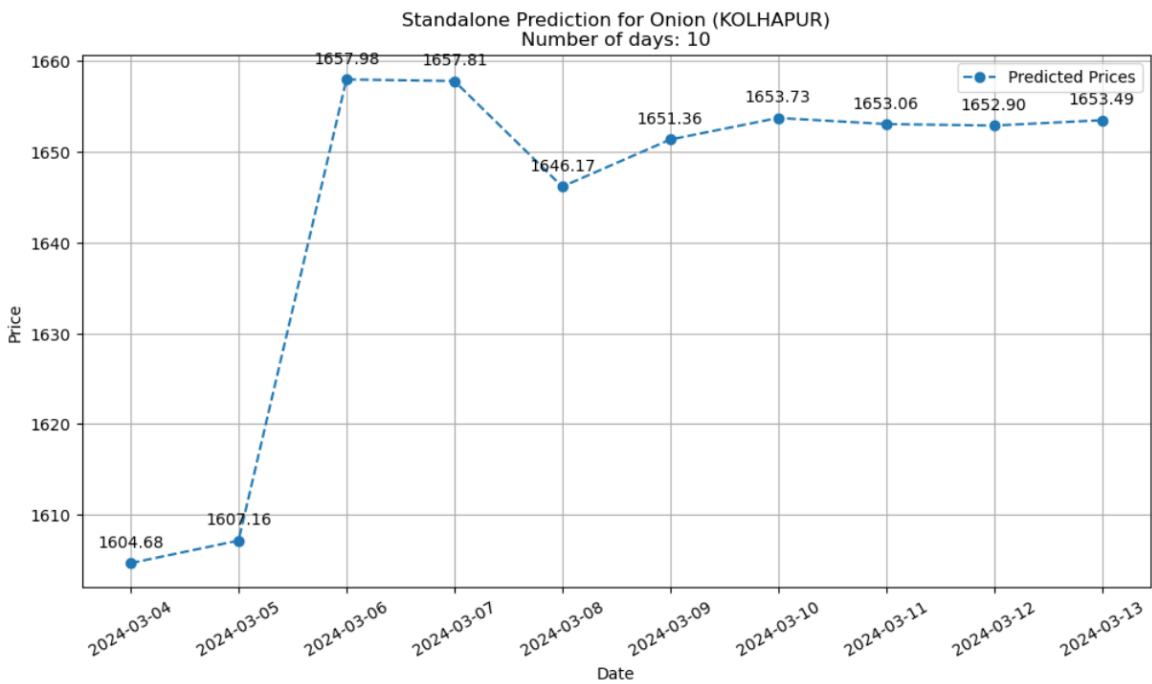




4. Onion:

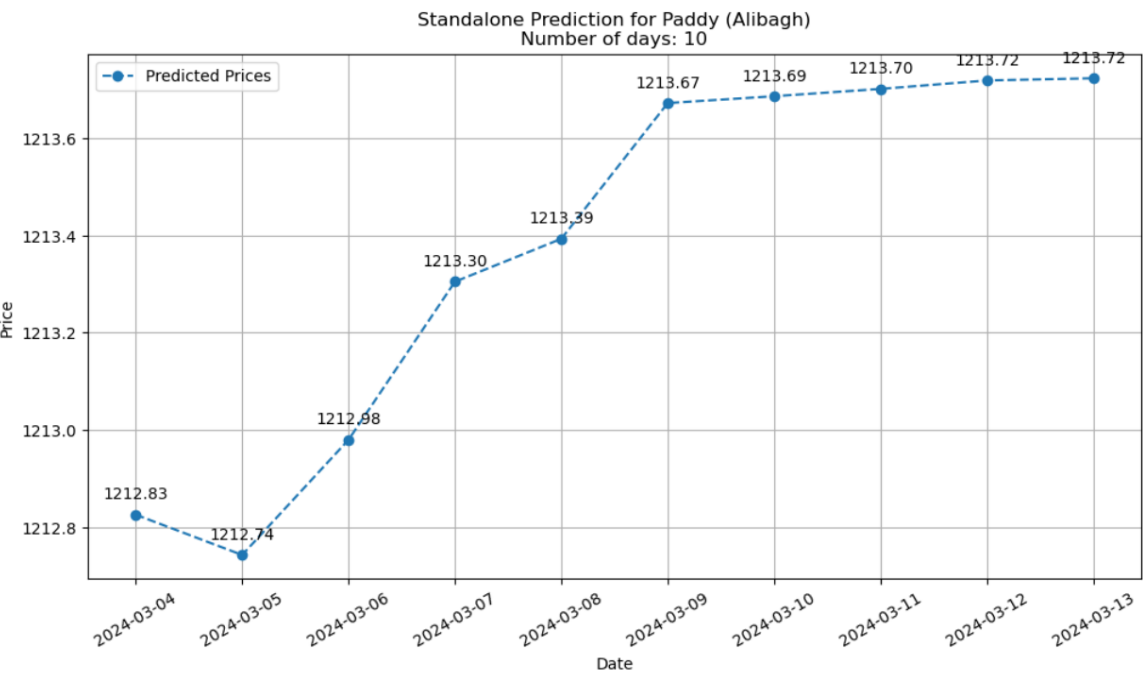
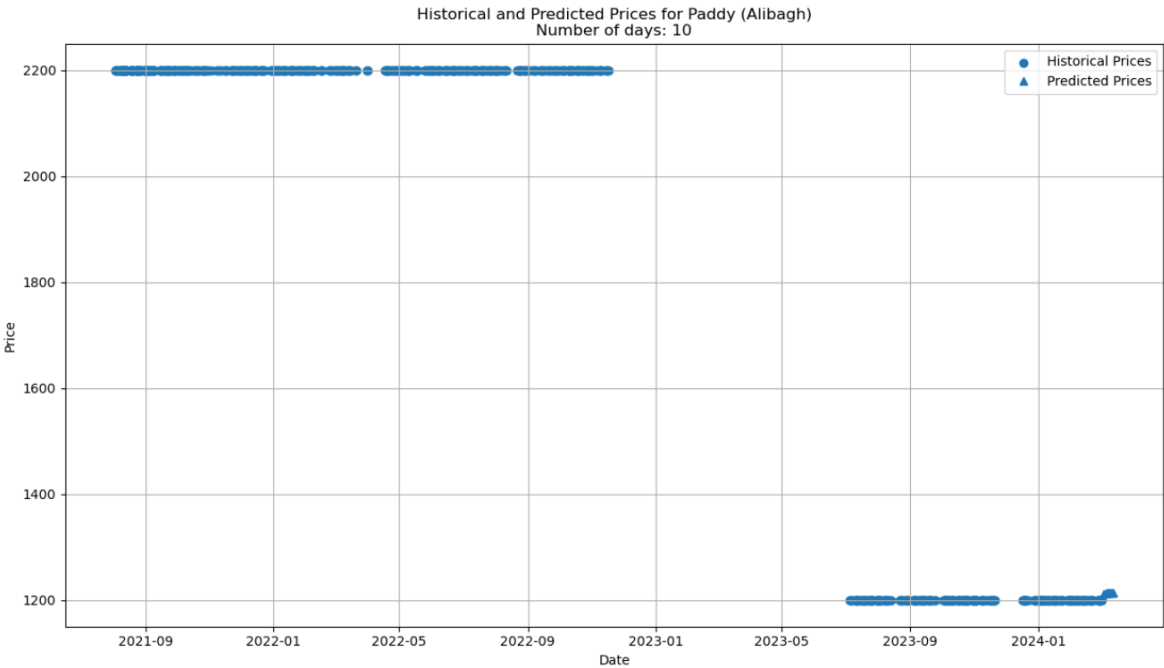
- Average Real-Time Price: 1255.56
- Average Predicted Price: 1460.86
- Average Deviation: 205.31
- Average Accuracy: 83.65%

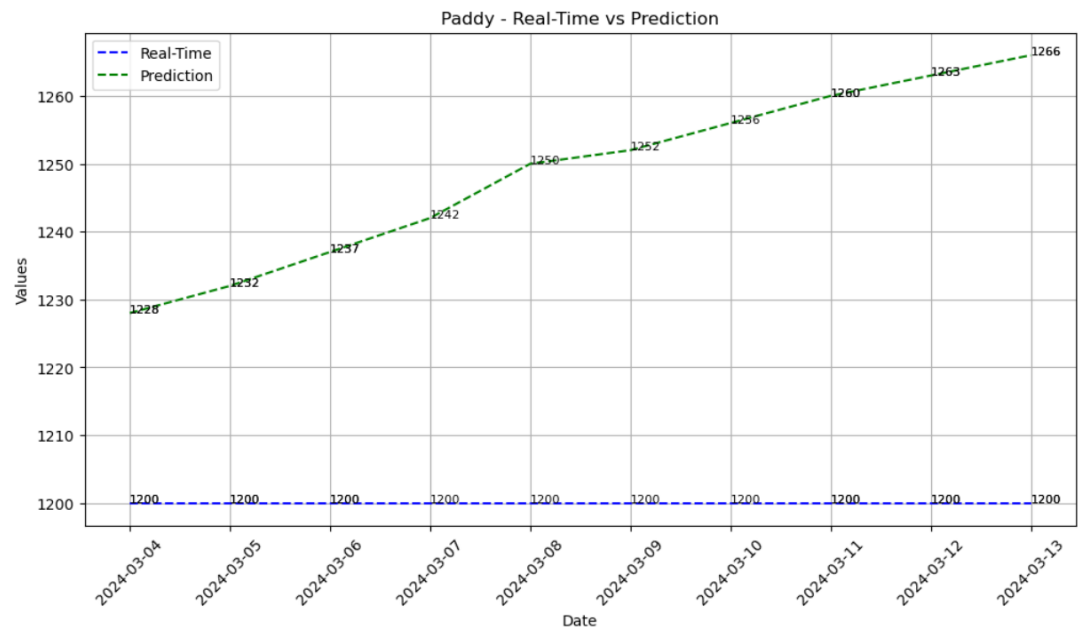




5. Paddy:

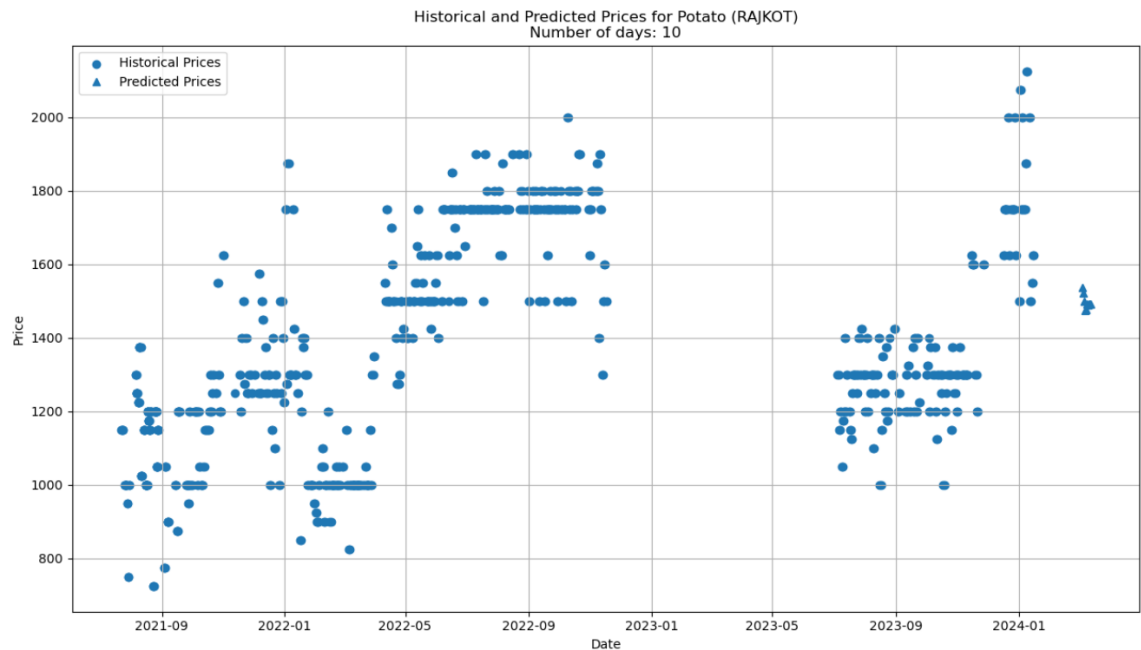
- Average Real-Time Price: 1200.00
- Average Predicted Price: 1248.54
- Average Deviation: 48.54
- Average Accuracy: 95.96%

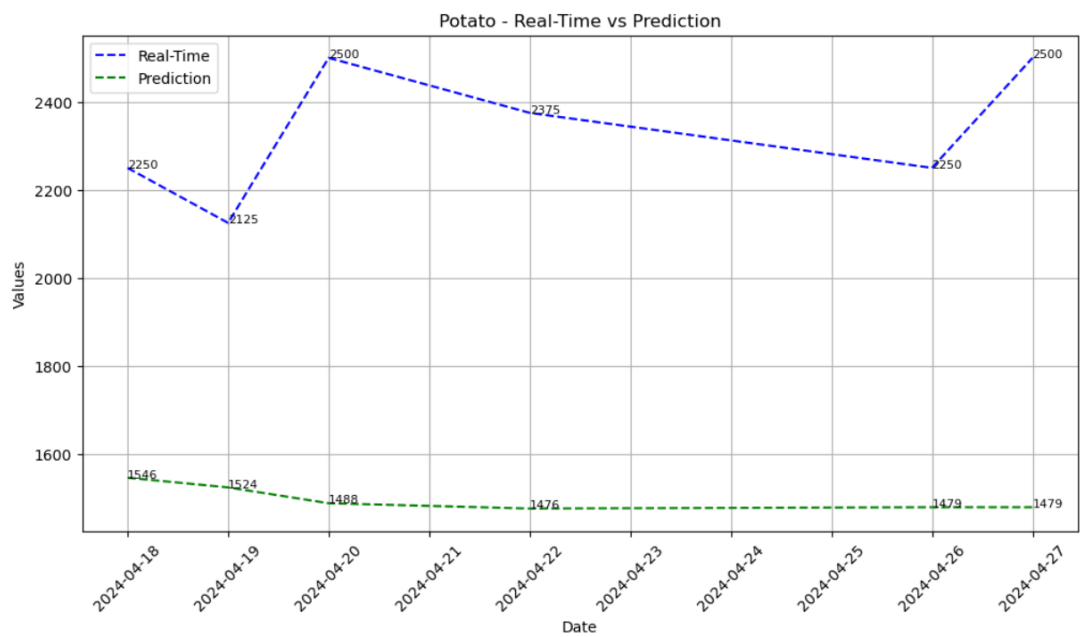
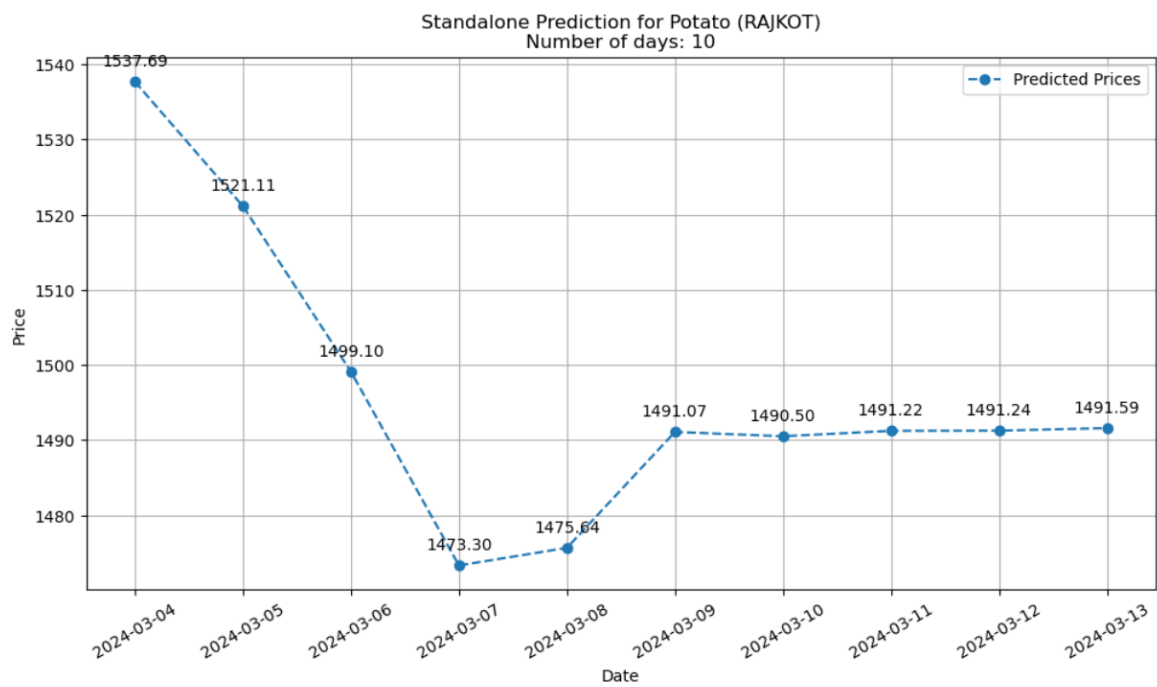




6. **Potato:**

- Average Real-Time Price: 2333.33
- Average Predicted Price: 1499.16
- Average Deviation: 834.17
- Average Accuracy: 64.25%





Conclusion:

The model shows high accuracy for predicting cotton (96.78%), corn (95.97%), and paddy (95.96%) prices but performs poorly for tomatoes. For onions and potatoes, accuracy is moderate. This analysis highlights the model's strengths and areas for improvement.

Visual Analysis:

The visual representation of the data (image provided) shows detailed predictions and deviations for each crop. The table in the image provides a clear overview of the model's performance across different dates and crops. This can help identify trends and patterns in prediction accuracy and highlight specific areas where the model needs adjustment.