

# Objective: To evaluate the performance of a Neural Network in predicting crop prices when fitted according to Corn.

## Dataset:

The dataset contains the following columns:

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

## Data Overview:

The dataset covers multiple dates for each crop with corresponding real-time and predicted prices. For corn, the data spans from 04/03/2024 to 13/03/2024. Similar data is available for cotton, tomato, onion, paddy, and potato, with varying date ranges. [Analysis Approach:](#)

### 1. Accuracy Calculation:

- The accuracy of the model's predictions is calculated using the formula:
- For each crop and date, the deviation between the real-time price and the predicted price is computed.
- The accuracy percentage is derived to measure the model's performance.

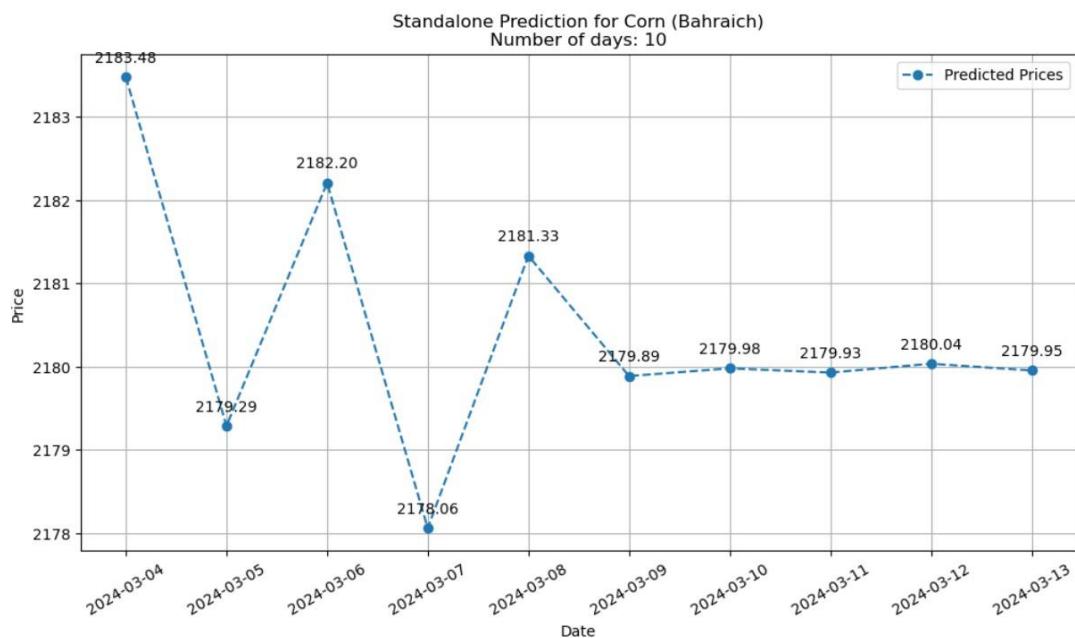
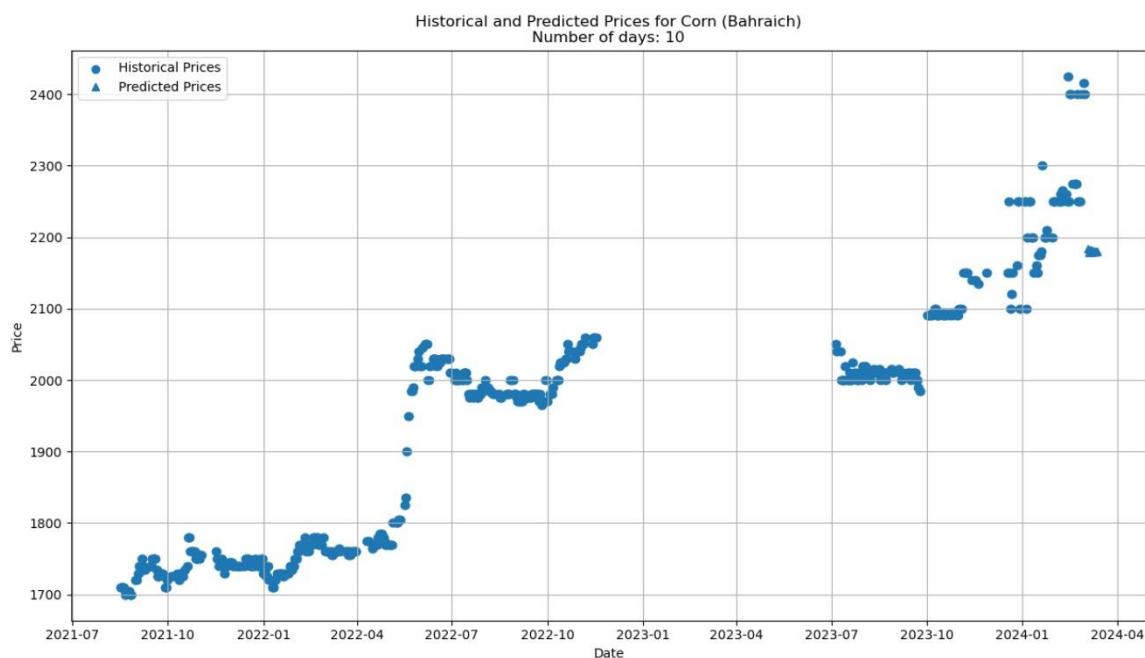
### 2. Descriptive Statistics:

- The average real-time price, predicted price, deviation, and accuracy percentage are computed for each crop to provide an overall performance summary.

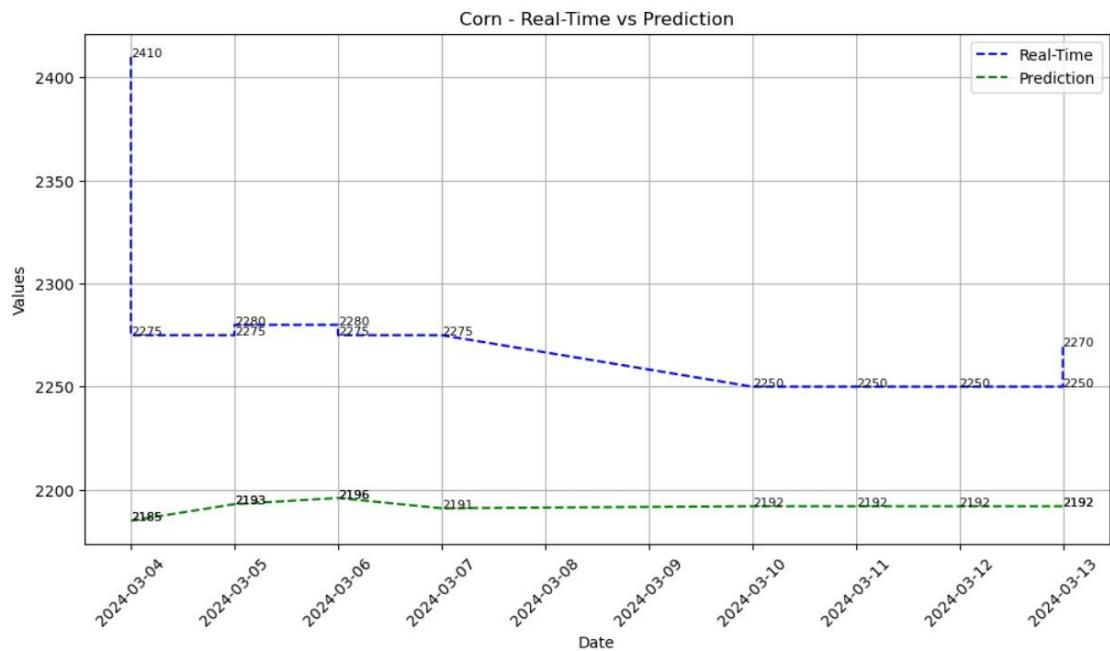
## Key Findings with Output:

### 1. Corn:

- o Average Real-Time Price: 2278.33
- o Average Predicted Price: 2192.20
- o Average Deviation: 86.13
- o Average Accuracy: 96.22%

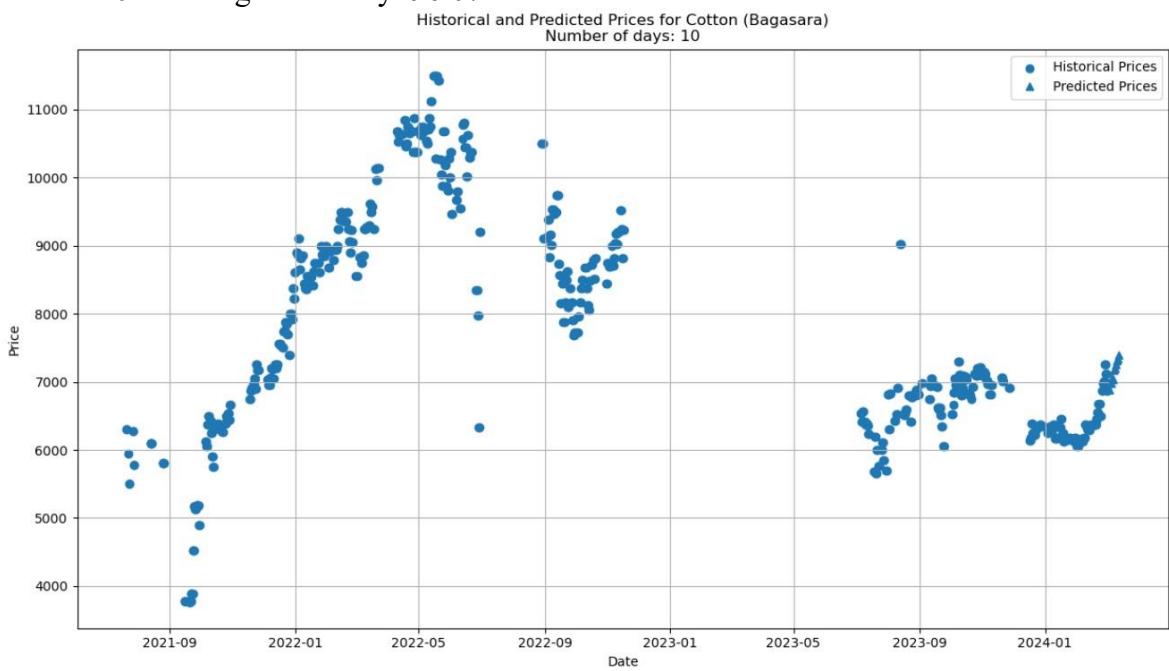


## Crop-Wise Trained Neural Networks



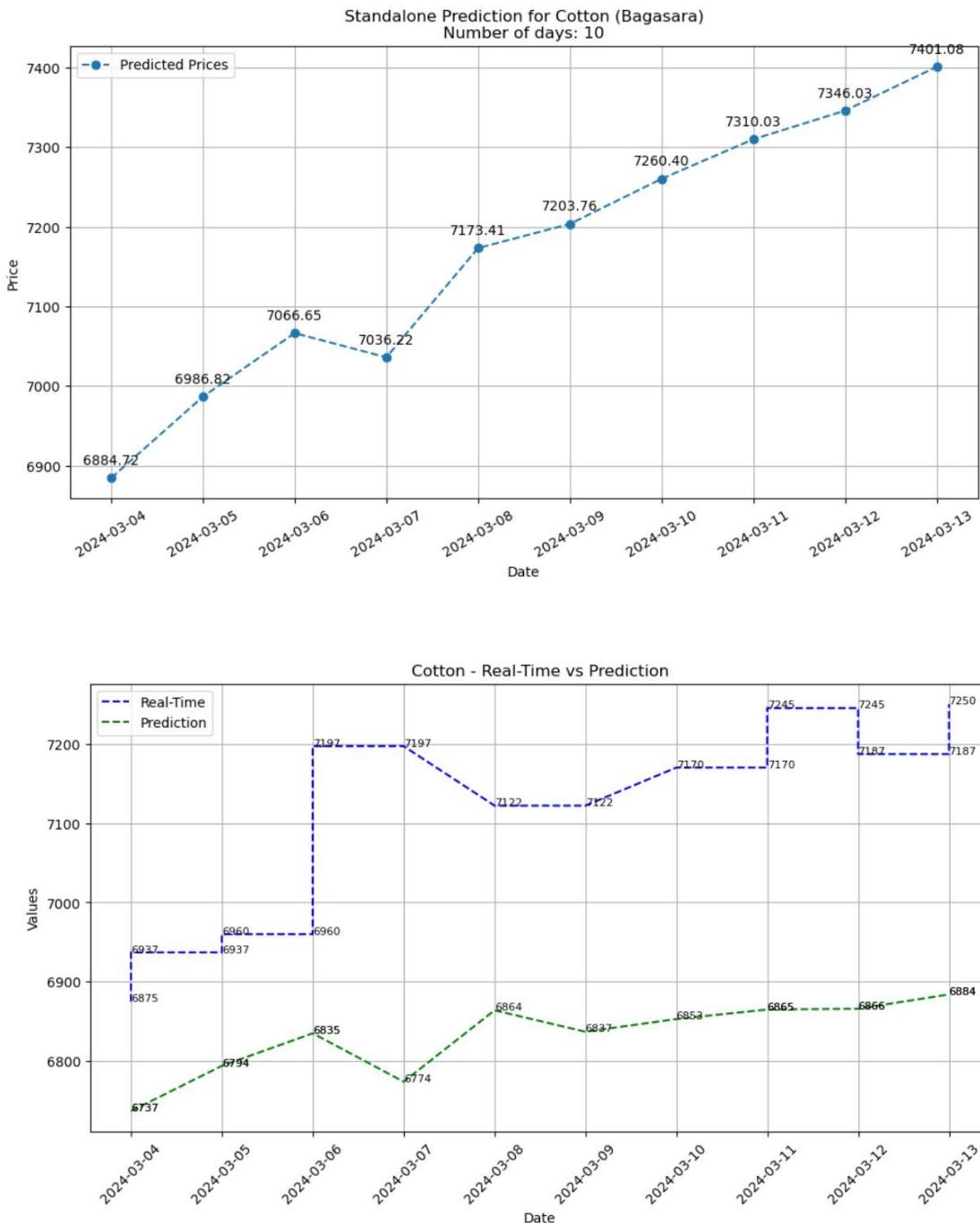
### 2. Cotton:

- Average Real-Time Price: 7110.06
- Average Predicted Price: 6830.94
- Average Deviation: 279.12
- Average Accuracy: 96.07%



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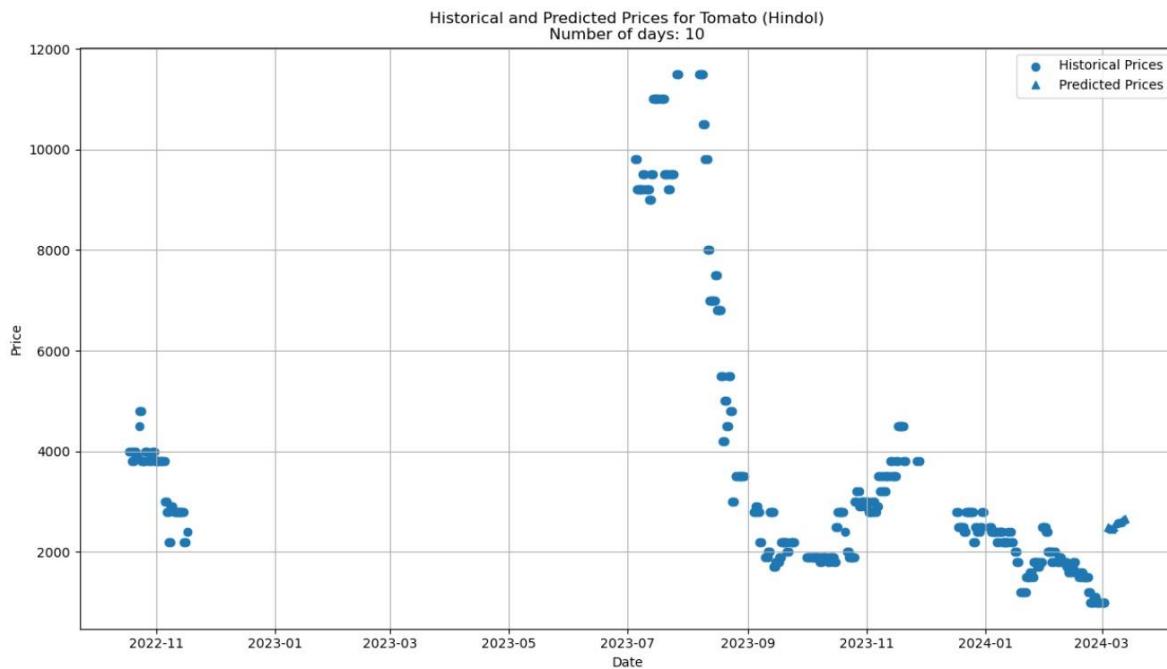
## Crop-Wise Trained Neural Networks



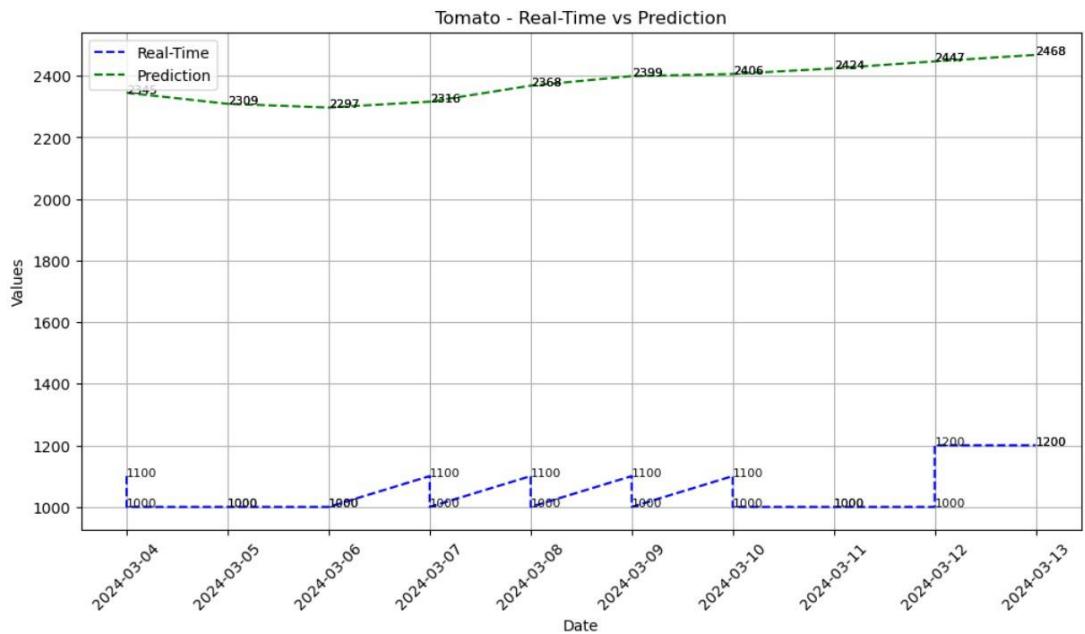
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### 3. Tomato:

- Average Real-Time Price: 1055.00
- Average Predicted Price: 2378.35
- Average Deviation: 1323.35
- Average Accuracy: -25.44% (Negative indicates poor model performance)

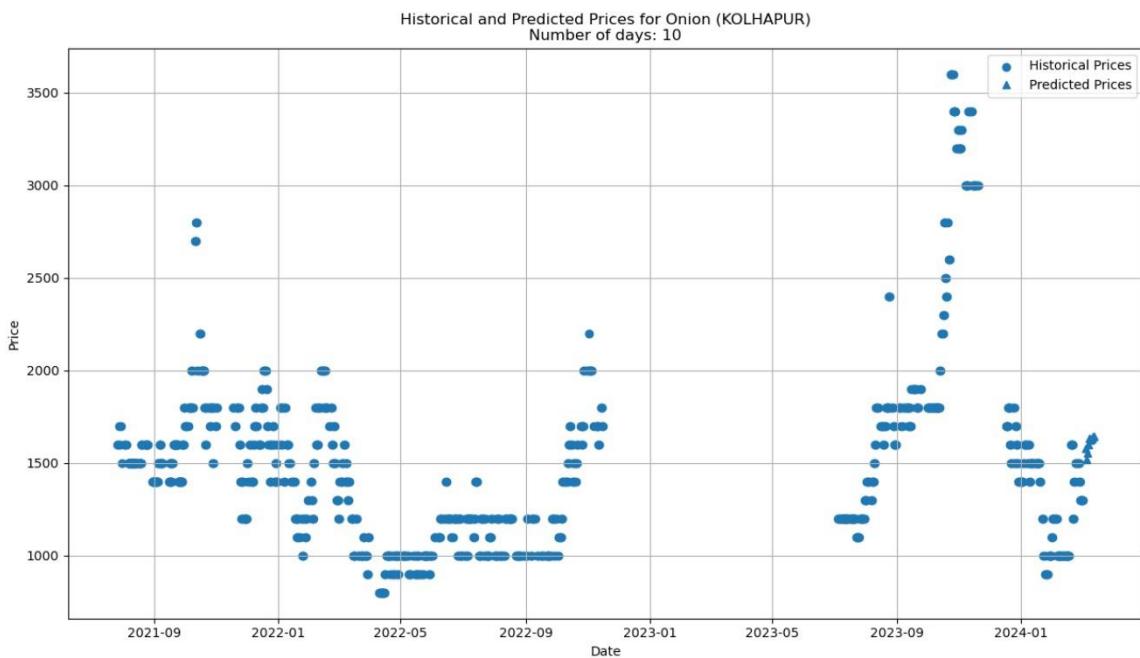


## Crop-Wise Trained Neural Networks



### 4. Onion:

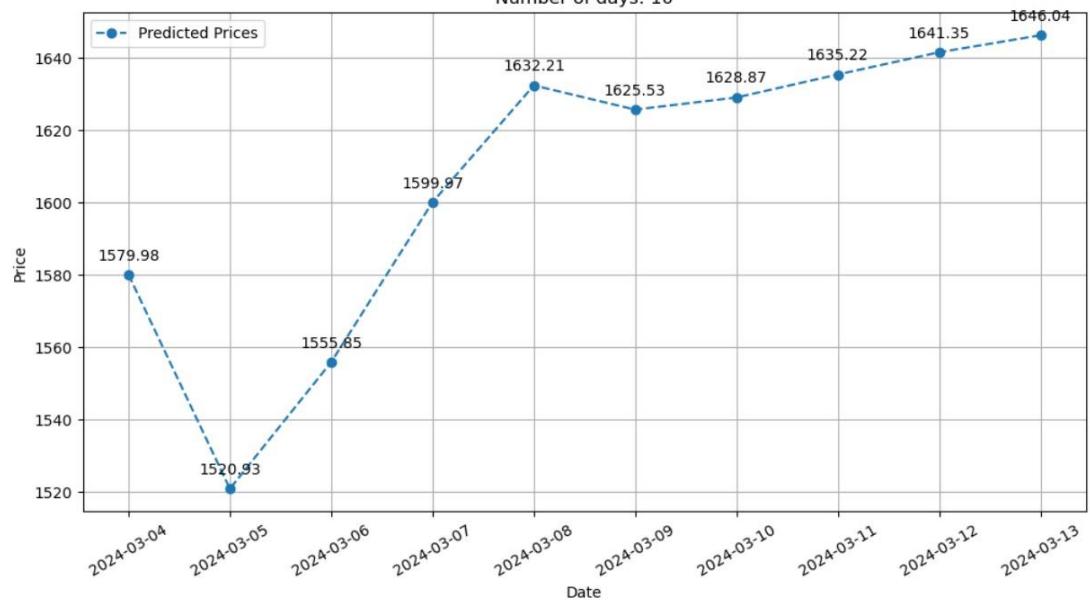
- Average Real-Time Price: 1255.56
- Average Predicted Price: 1623.22
- Average Deviation: 367.67
- Average Accuracy: 70.72%



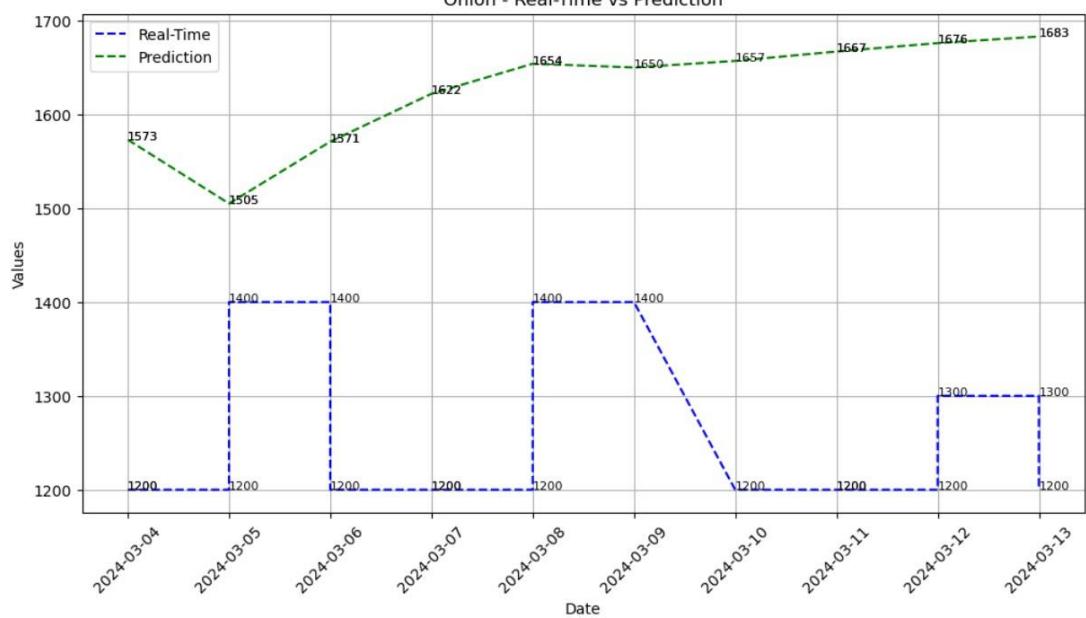
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## Crop-Wise Trained Neural Networks

Standalone Prediction for Onion (KOLHAPUR)  
Number of days: 10



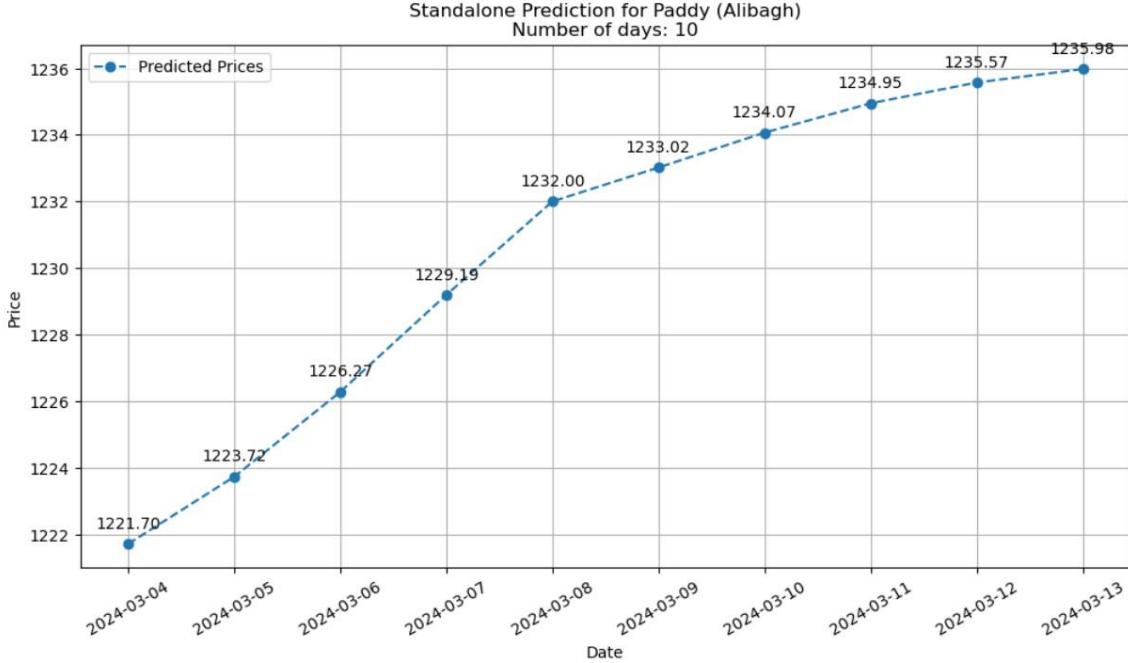
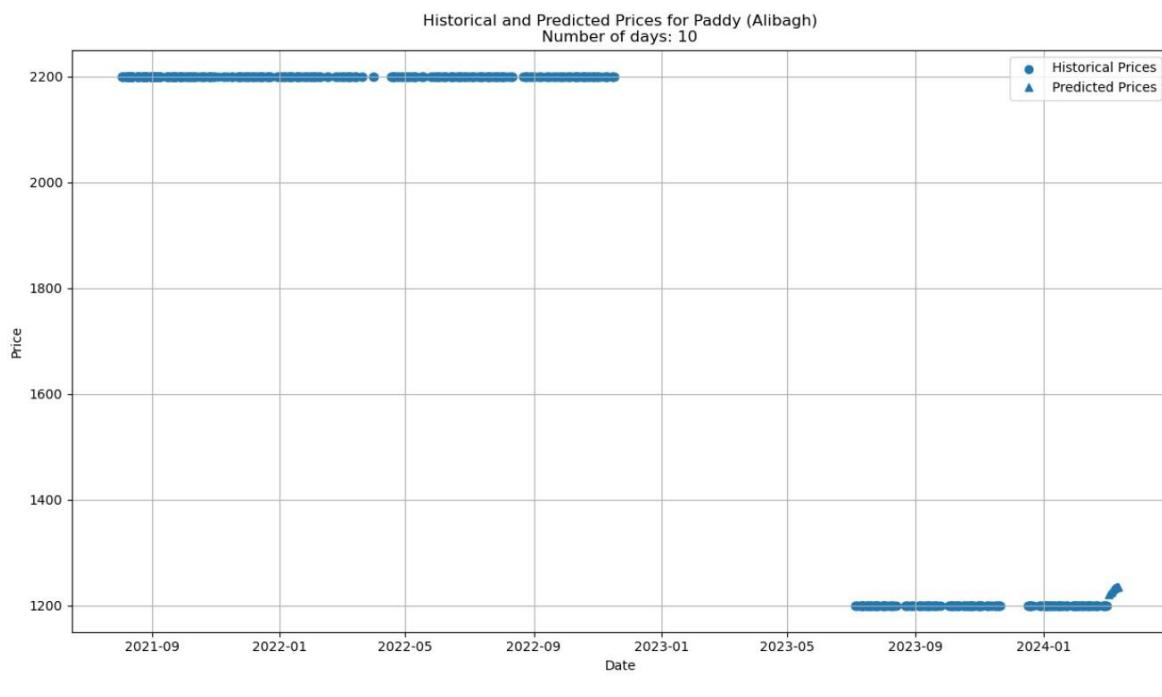
Onion - Real-Time vs Prediction



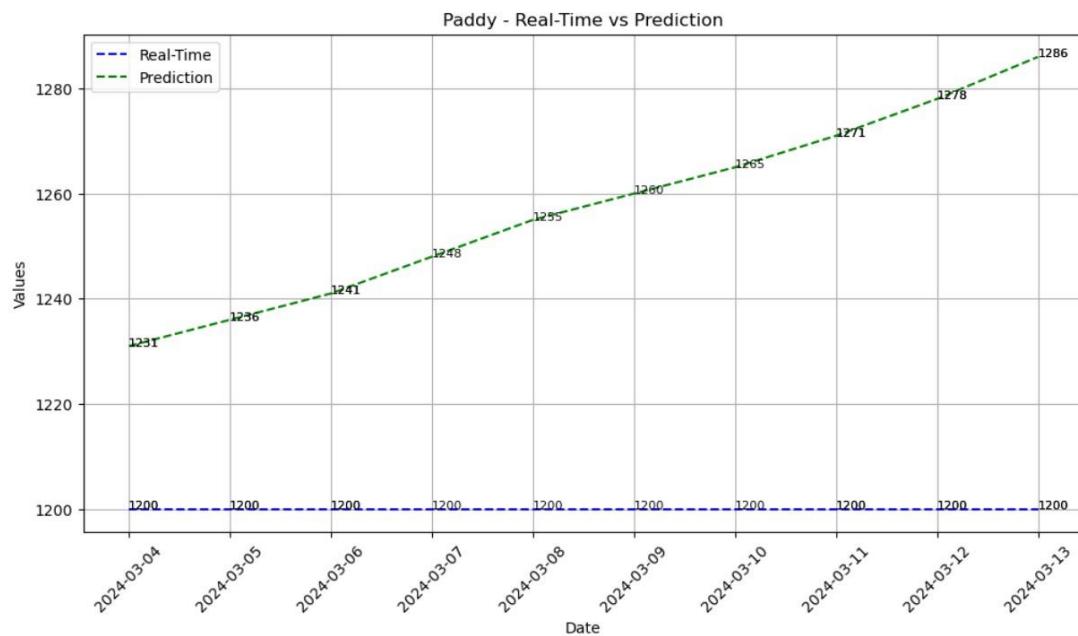
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### 5. Paddy:

- Average Real-Time Price: 1200.00
- Average Predicted Price: 1257.70
- Average Deviation: 57.70
- Average Accuracy: 95.19%

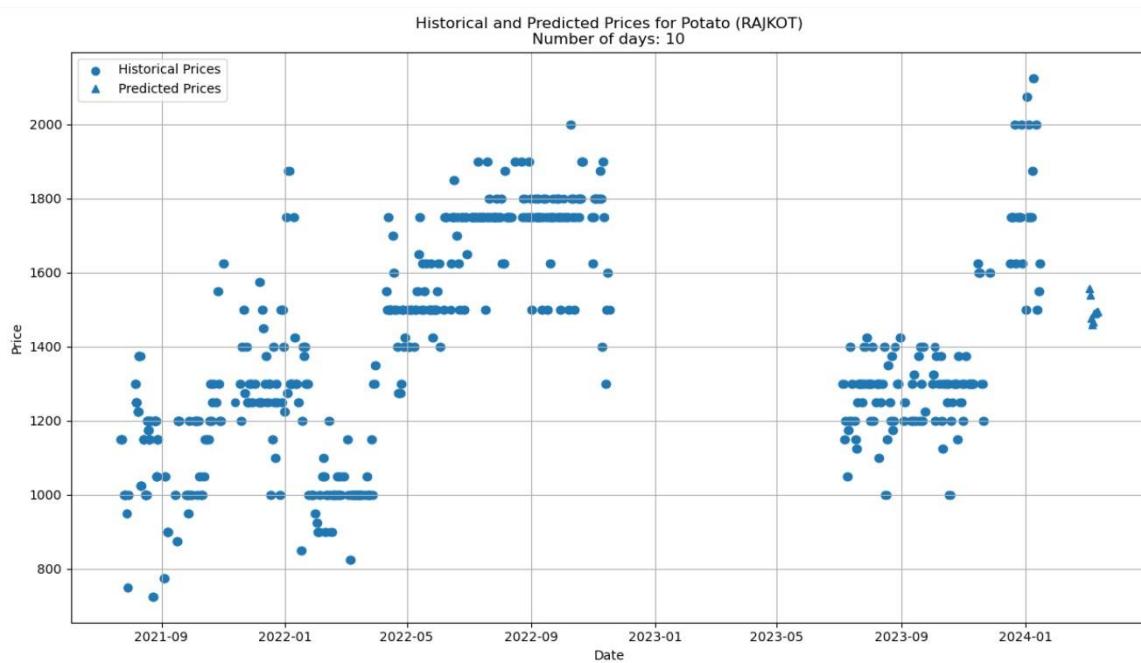


## Crop-Wise Trained Neural Networks



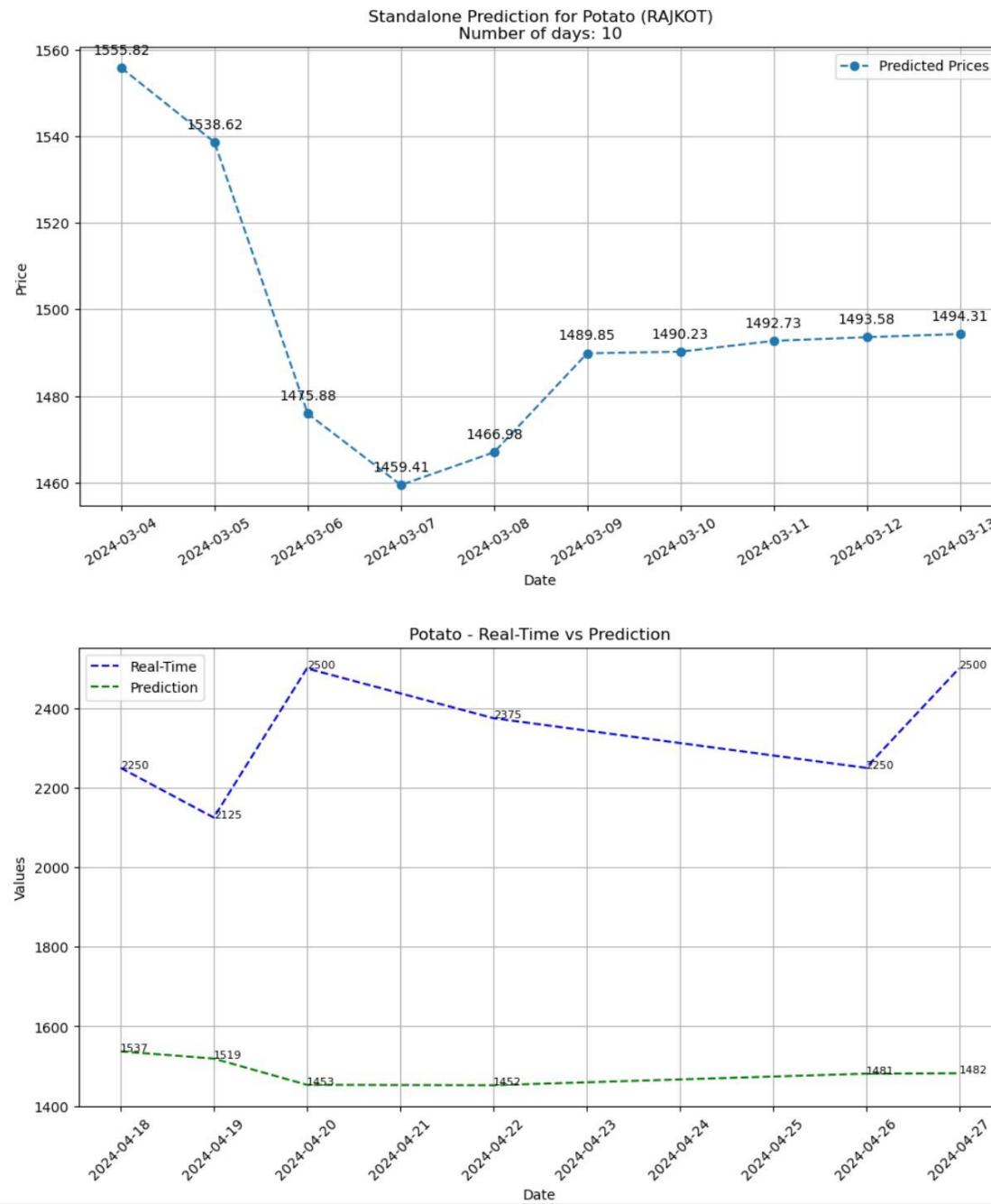
### 6. Potato:

- Average Real-Time Price: 2333.33
- Average Predicted Price: 1487.87
- Average Deviation: 845.46
- Average Accuracy: 63.77%



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## Crop-Wise Trained Neural Networks



## Conclusion:

The model demonstrates high accuracy in predicting prices for crops like corn (96.22%), cotton (96.07%), and paddy (95.19%). However, it performs poorly for tomatoes, showing negative accuracy, indicating significant deviations from actual prices. For onions and potatoes, the accuracy is moderate, suggesting room for improvement in prediction accuracy.

This analysis highlights the strengths and weaknesses of the current model in predicting crop prices, providing a foundation for further model refinement and optimization. Future work may focus on enhancing the model's accuracy for crops with lower performance and exploring additional features to improve predictive capability.

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# Objective: To evaluate the performance of a Neural Network in predicting crop prices when fitted according to Cotton.

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## 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. For cotton, data spans from 04/03/2024 to 13/03/2024. Similar data is available for corn, tomato, onion, paddy, and potato.

## 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.

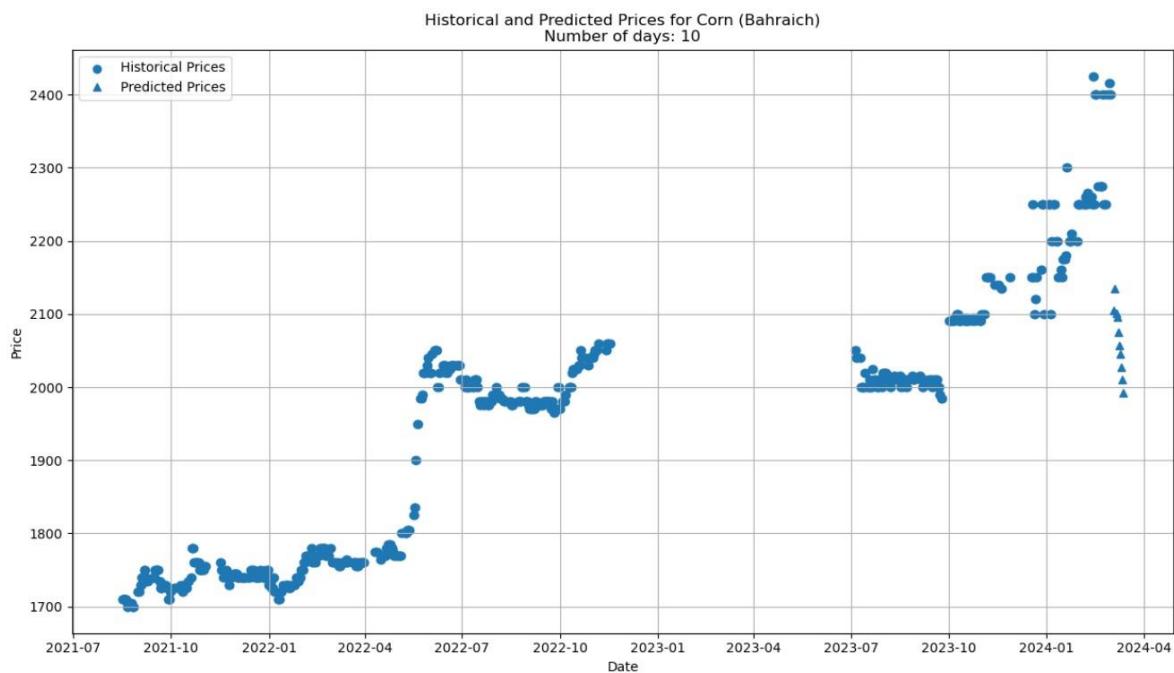
### 2. Descriptive Statistics:

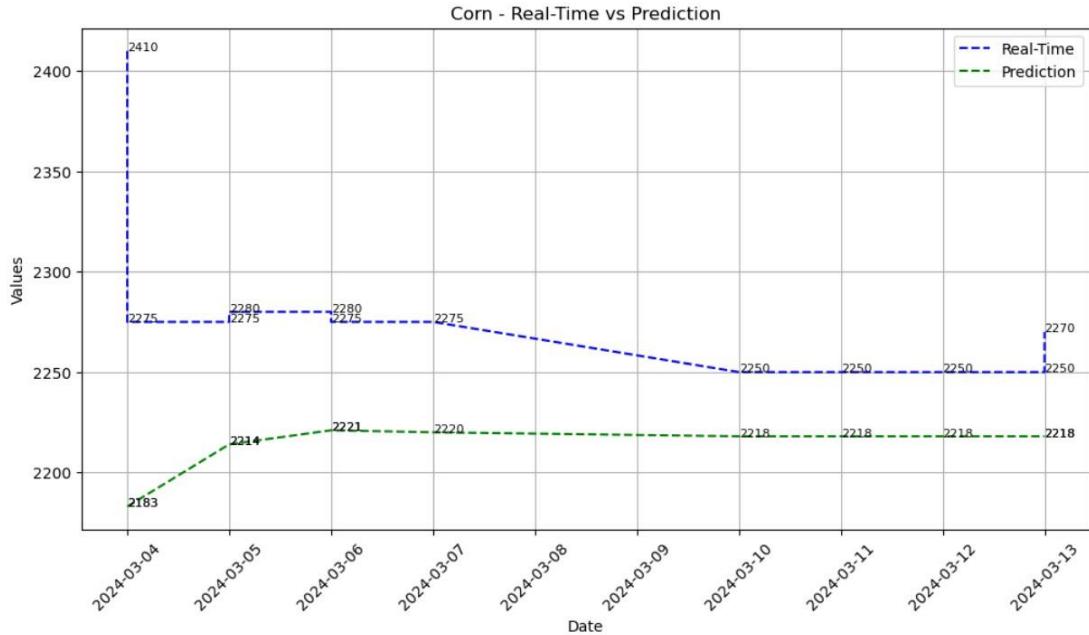
- Average real-time price, predicted price, deviation, and accuracy percentage are calculated for each crop.

## Key Findings and Output:

### 1. Corn:

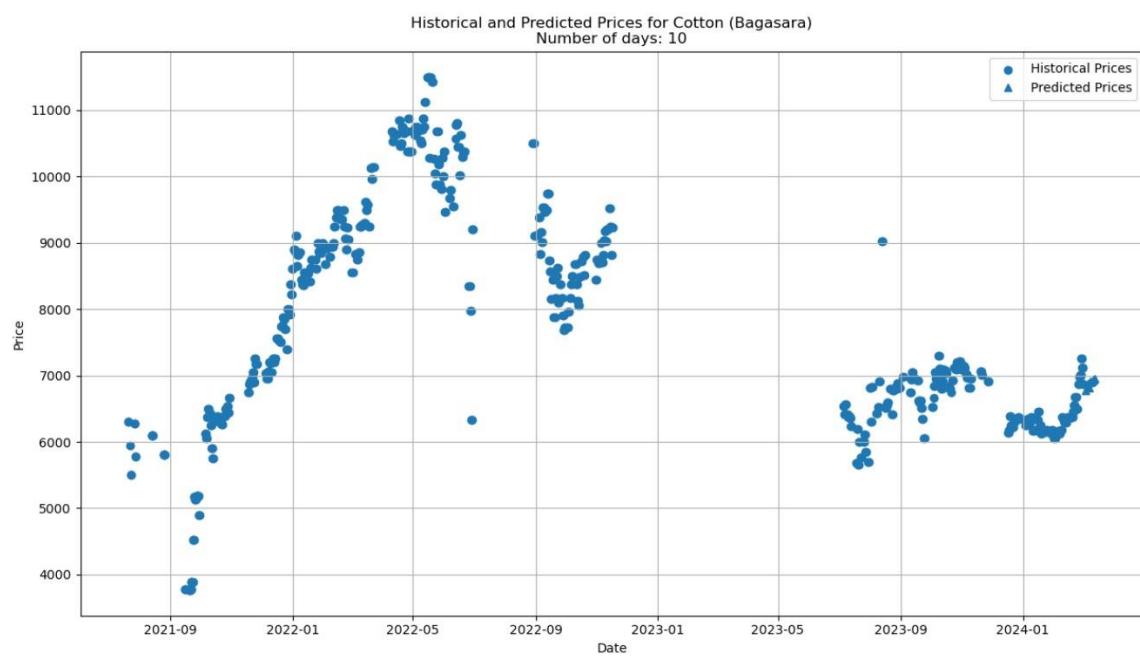
- Average Real-Time Price: 2278.33
- Average Predicted Price: 2212.74
- Average Deviation: 65.60
- Average Accuracy: 97.12%



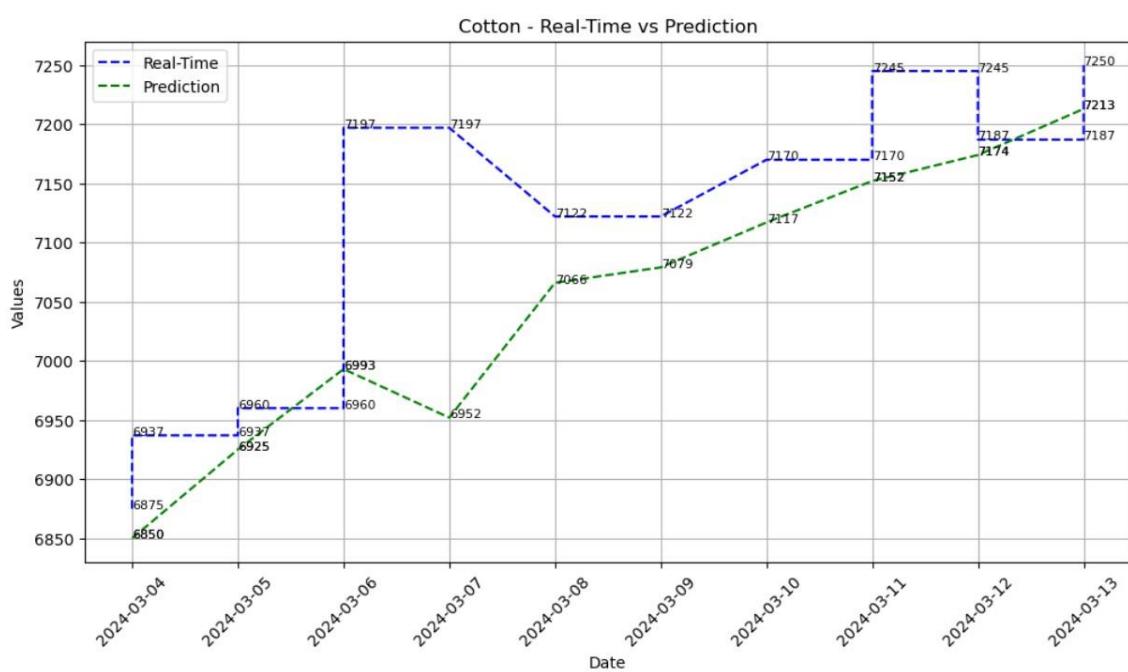
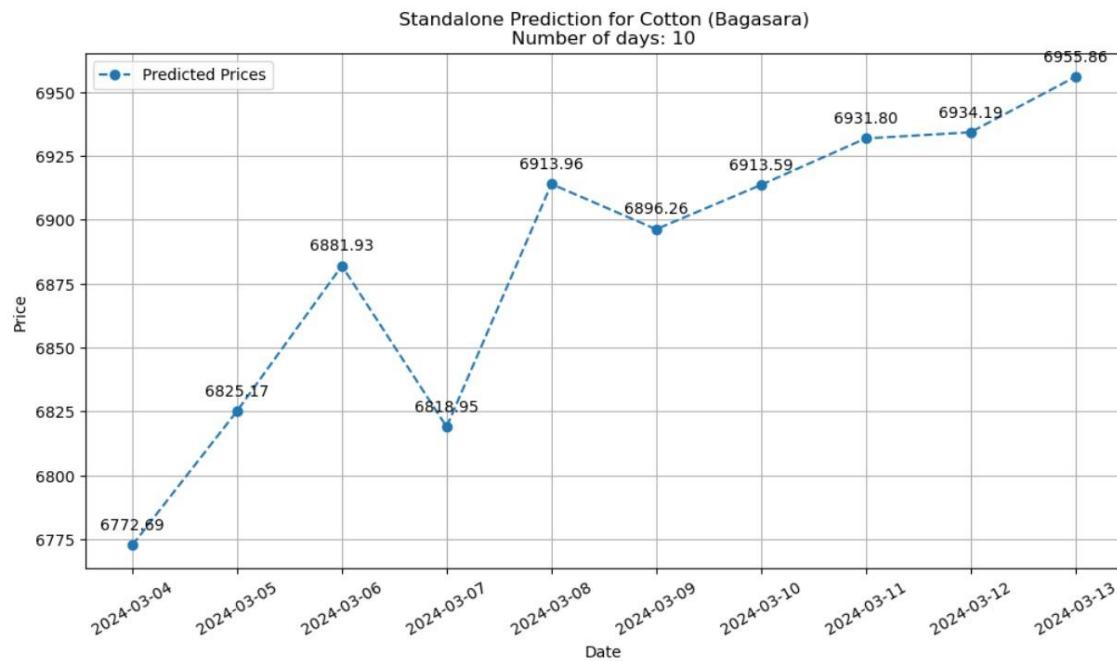


## 2. Cotton:

- Average Real-Time Price: 7110.06
- Average Predicted Price: 7052.21
- Average Deviation: 57.85
- Average Accuracy: 99.19%



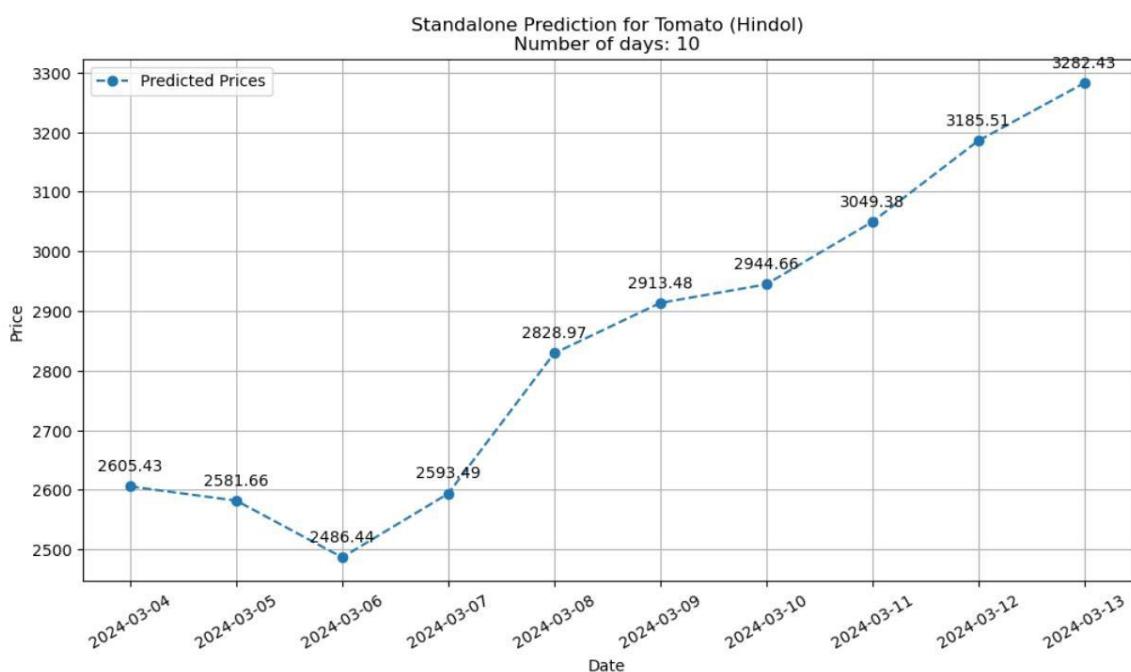
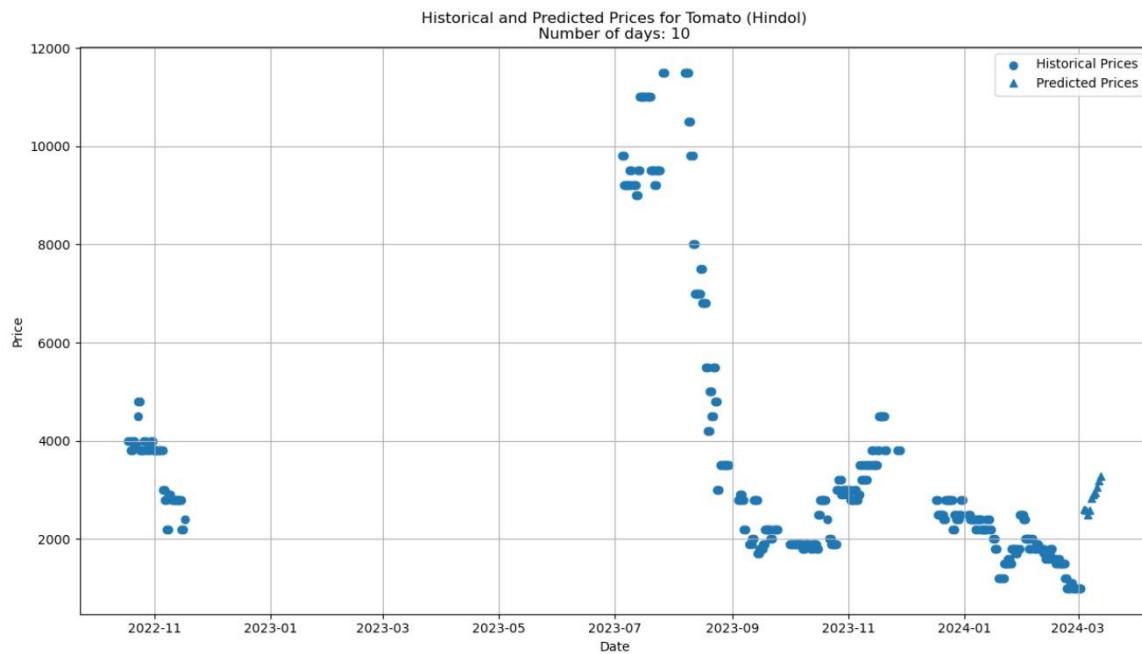
## Crop-Wise Trained Neural Networks



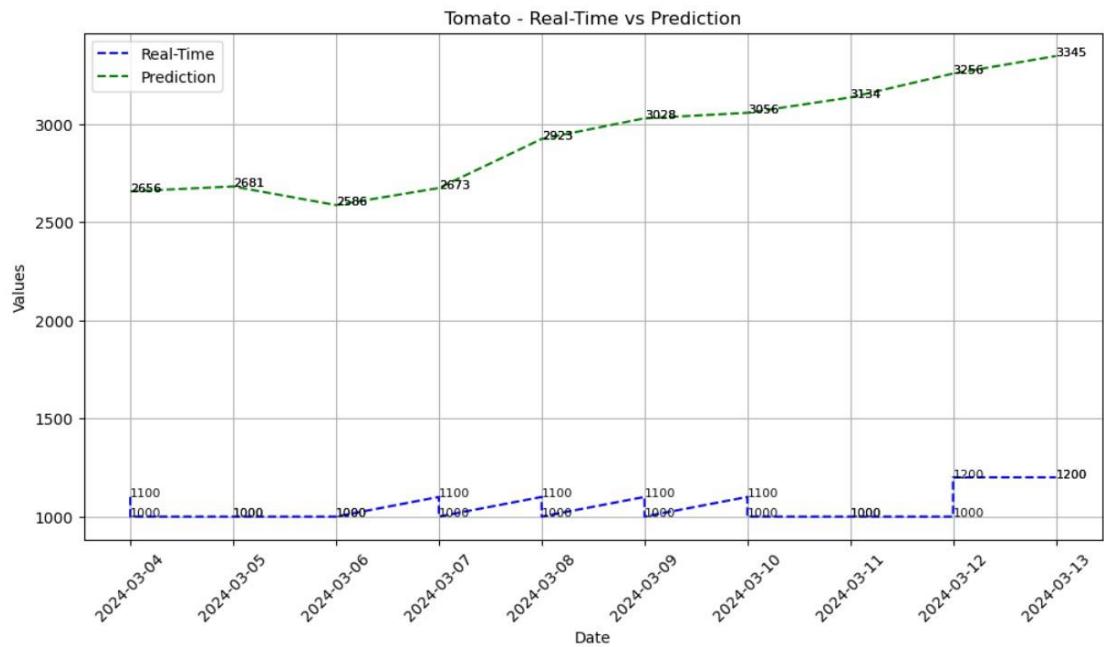
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### 3. Tomato:

- Average Real-Time Price: 1055.00
- Average Predicted Price: 2934.37
- Average Deviation: 1879.37
- Average Accuracy: -78.14% (Poor model performance)

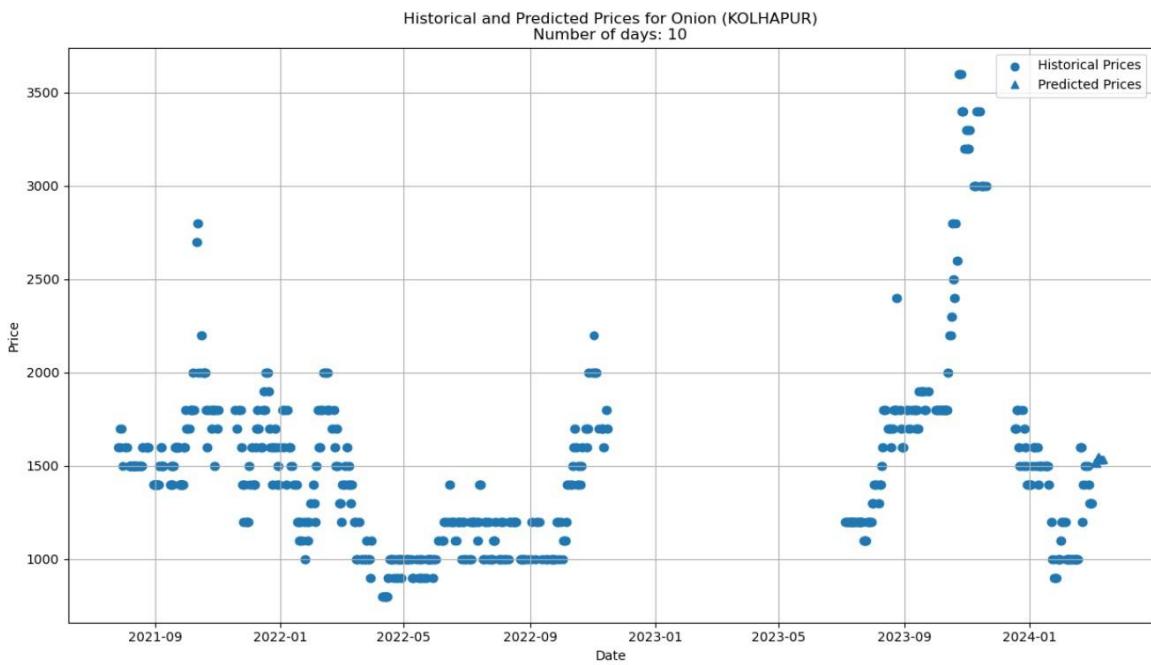


## Crop-Wise Trained Neural Networks



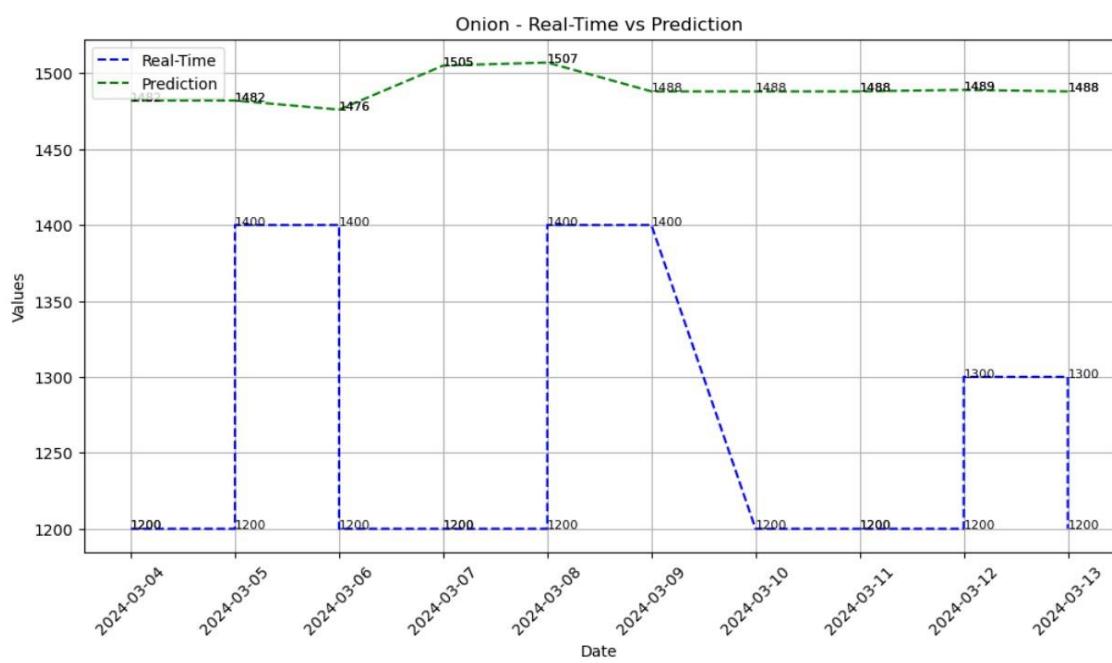
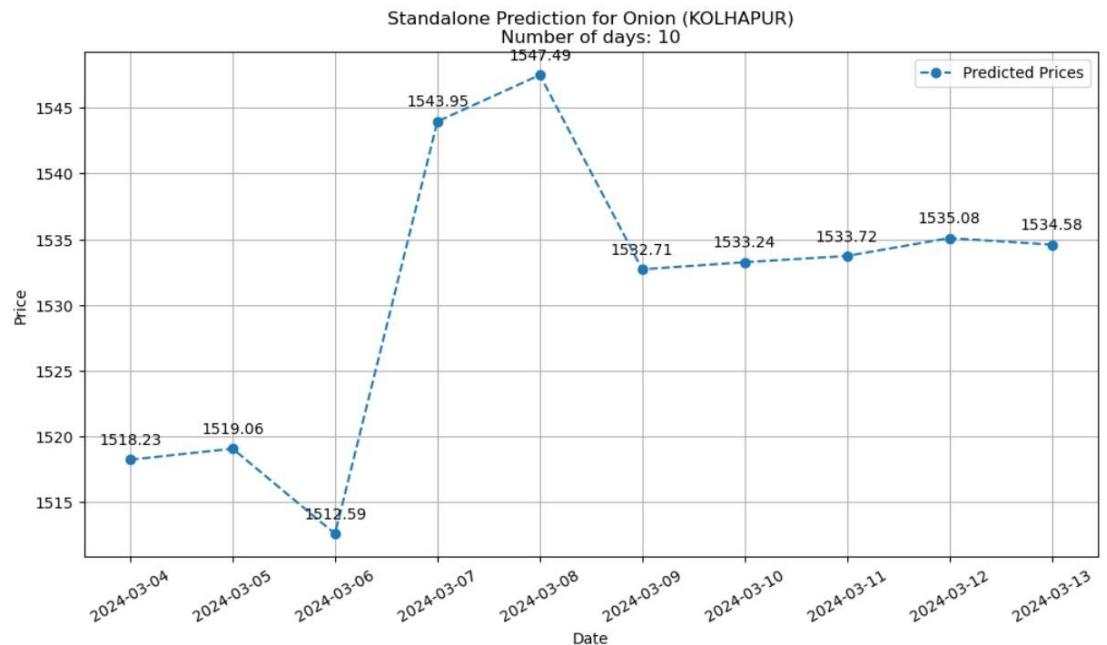
### 4. Onion:

- Average Real-Time Price: 1255.56
- Average Predicted Price: 1490.05
- Average Deviation: 234.49
- Average Accuracy: 81.32%



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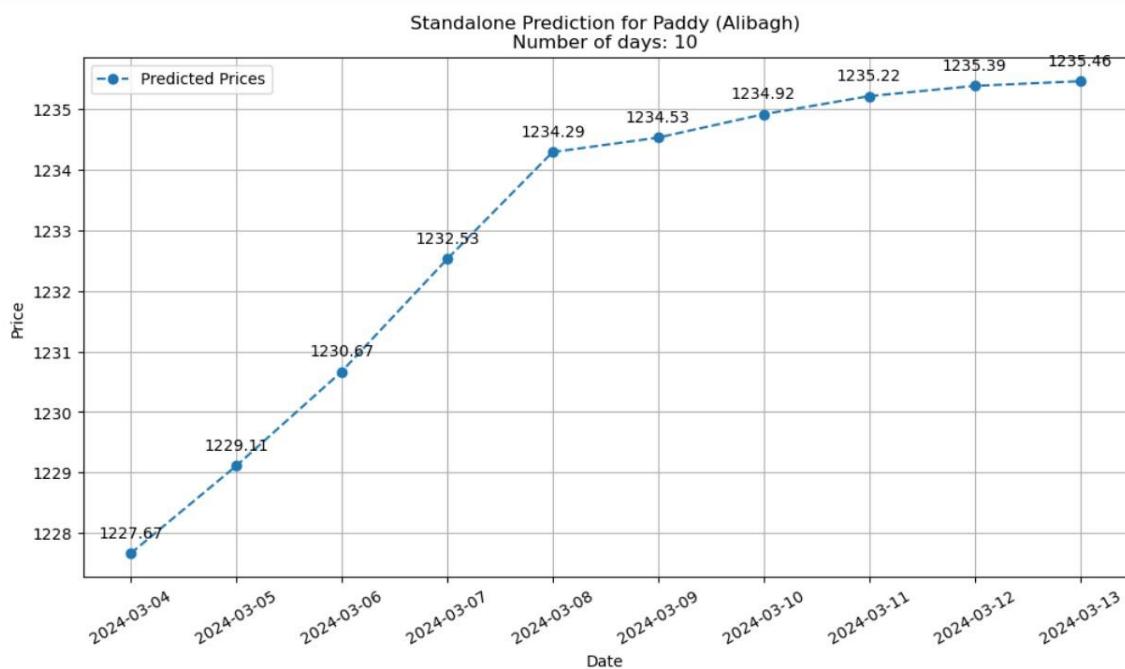
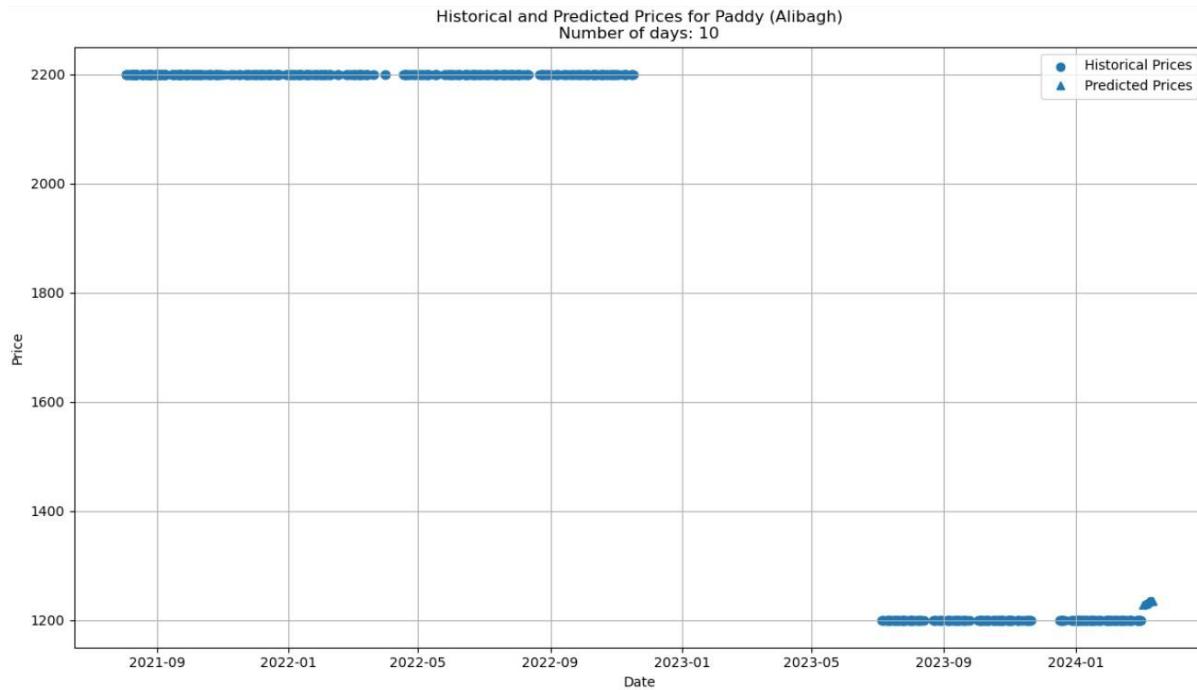
## Crop-Wise Trained Neural Networks



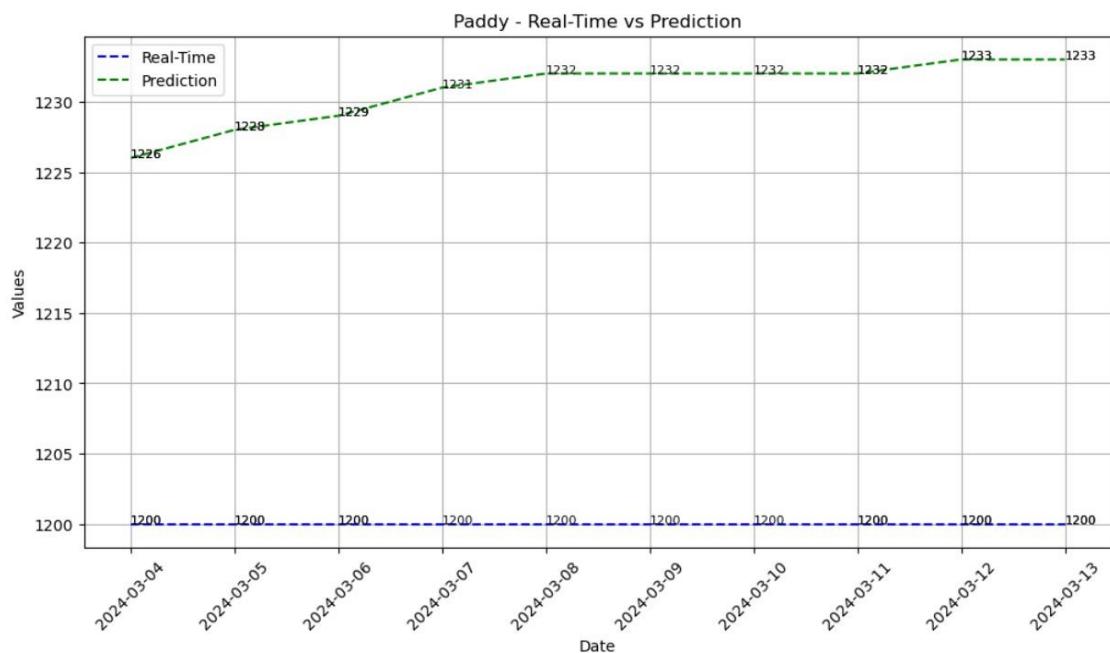
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### 5. Paddy:

- Average Real-Time Price: 1200.00
- Average Predicted Price: 1231.06
- Average Deviation: 31.06
- Average Accuracy: 97.41%

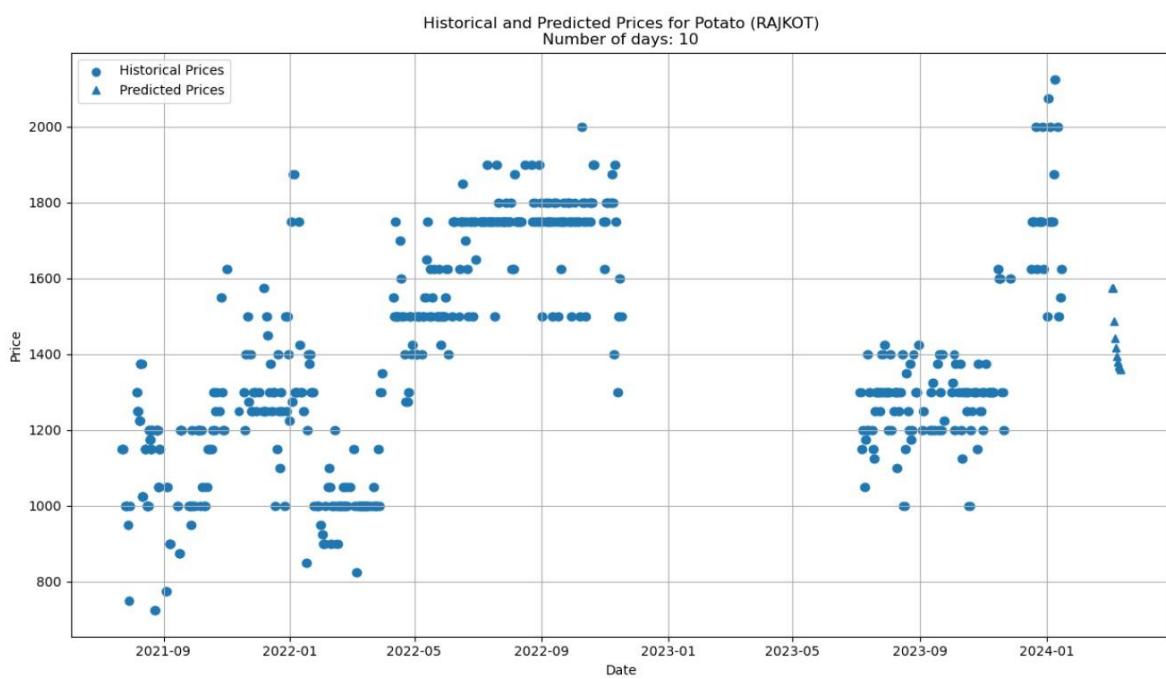


## Crop-Wise Trained Neural Networks



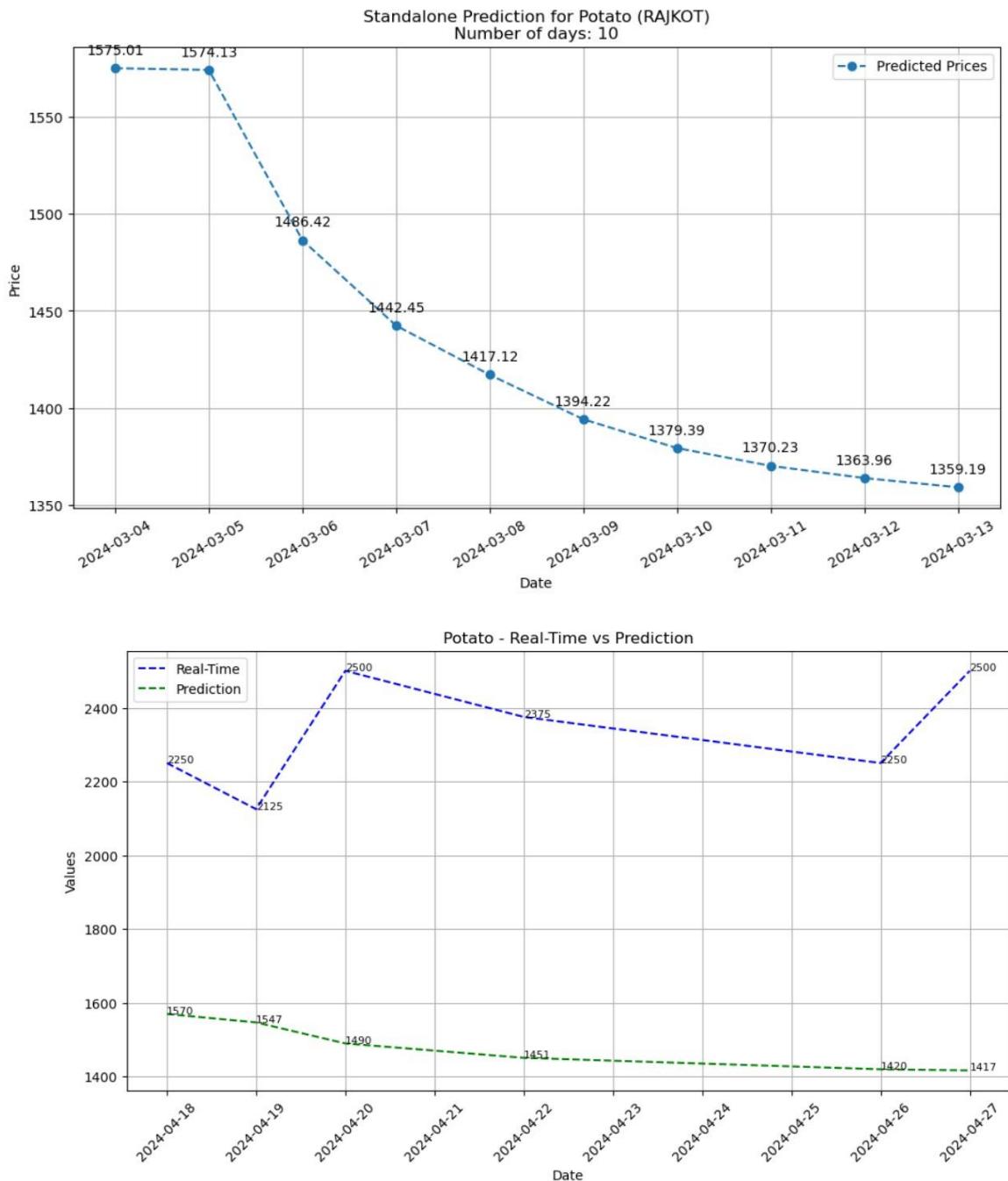
### 6. Potato:

- Average Real-Time Price: 2333.33
- Average Predicted Price: 1483.04
- Average Deviation: 850.29
- Average Accuracy: 63.56%



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## Crop-Wise Trained Neural Networks



### Conclusion:

The model shows high accuracy for predicting cotton (99.19%), corn (97.12%), and paddy (97.41%) prices but performs poorly for tomatoes. For onions and potatoes, accuracy is moderate. This analysis highlights the model's strengths and areas for improvement.

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# Objective:

To evaluate the performance of a Neural Network in predicting crop prices when fitted according to Onion.

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## 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.

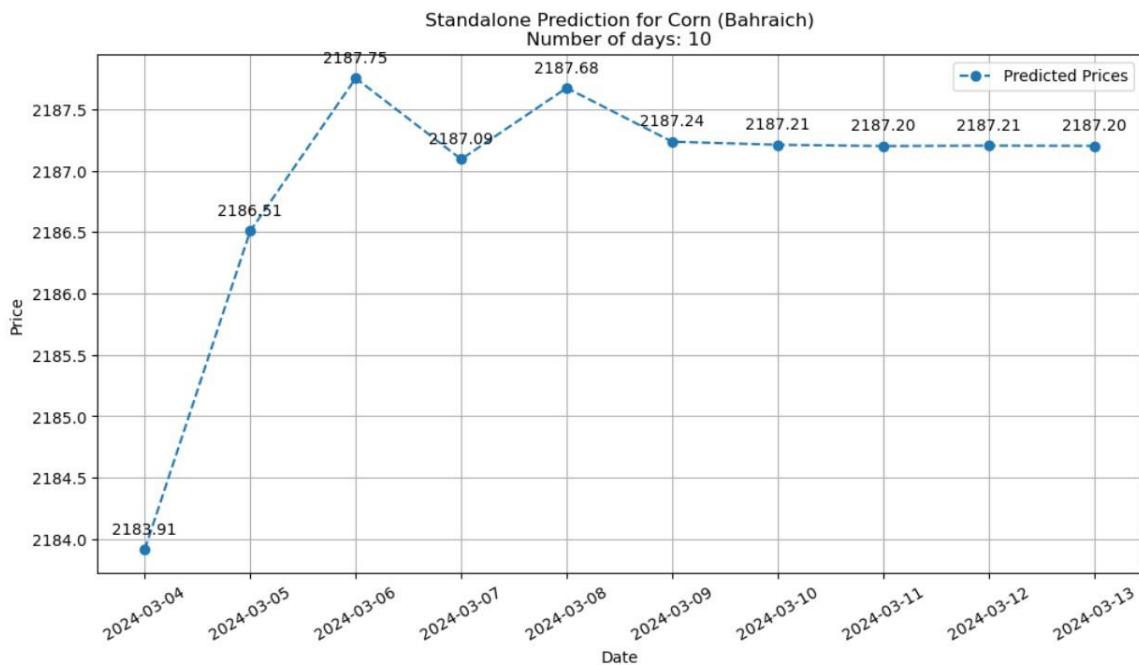
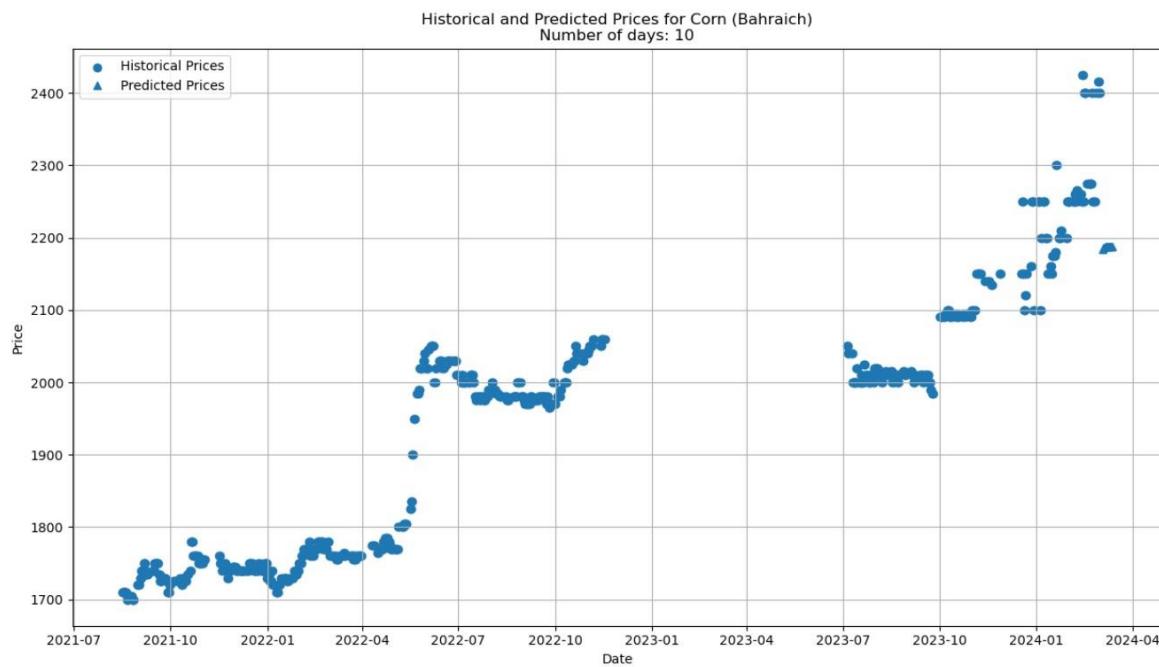
### 2. Descriptive Statistics:

- 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%

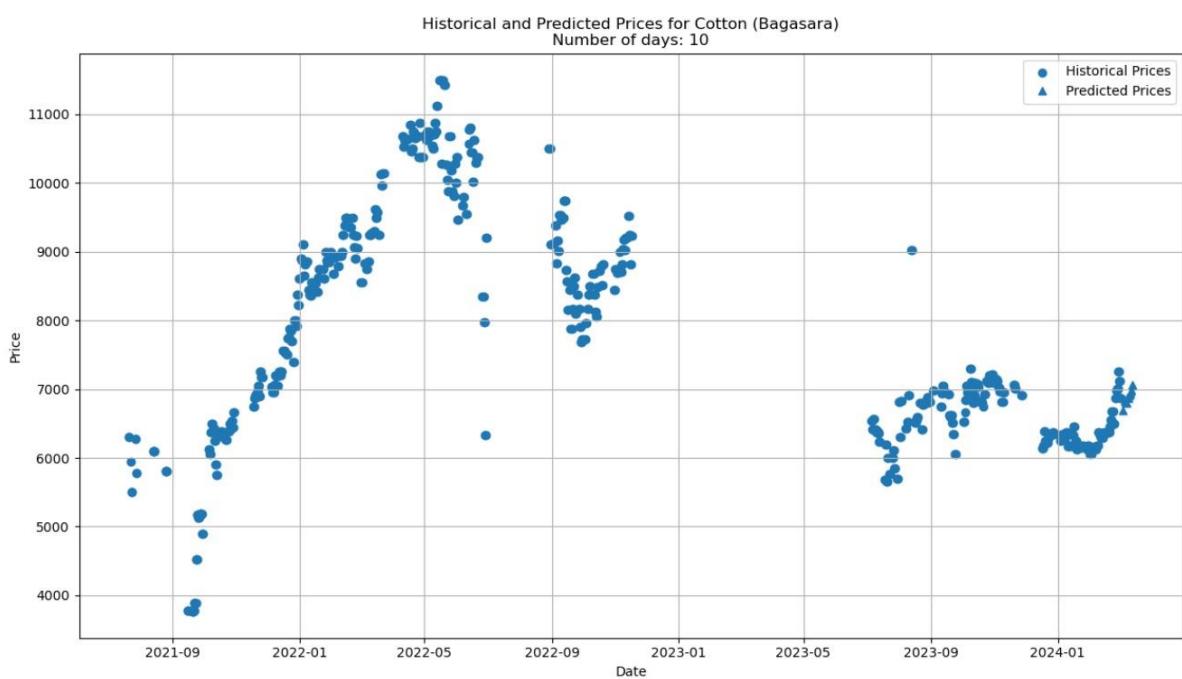


## Crop-Wise Trained Neural Networks



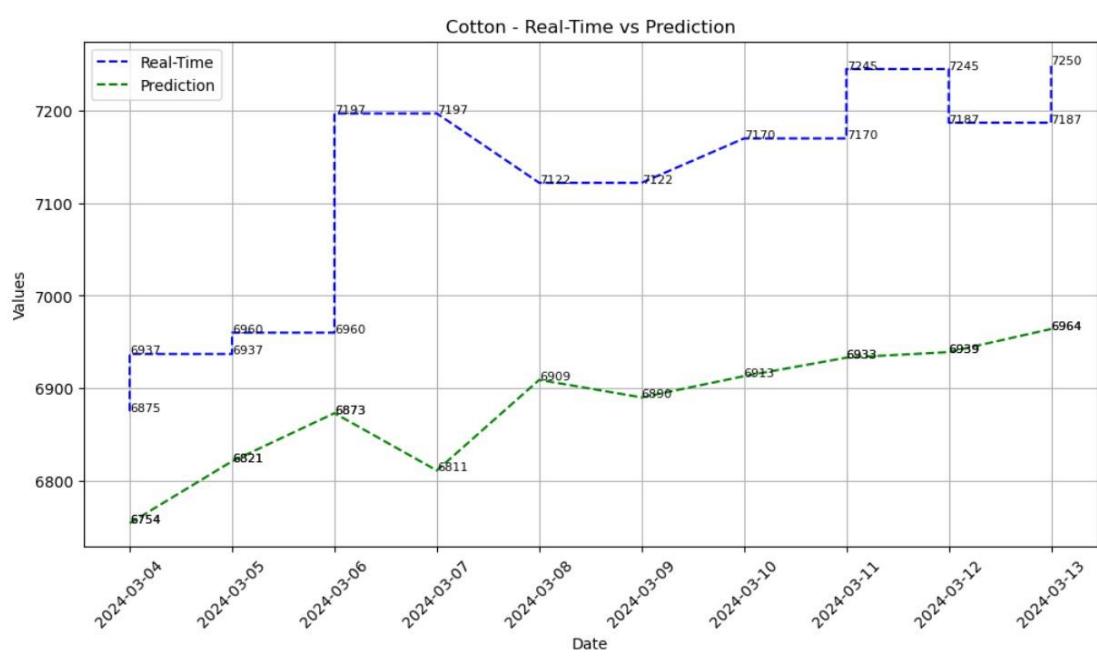
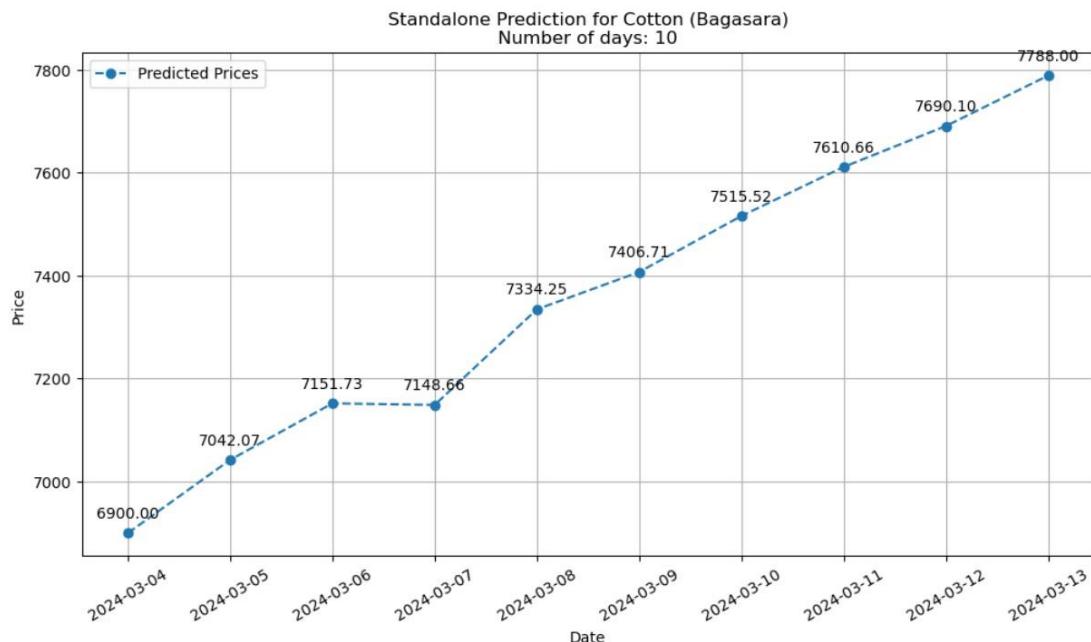
### 2. Cotton:

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



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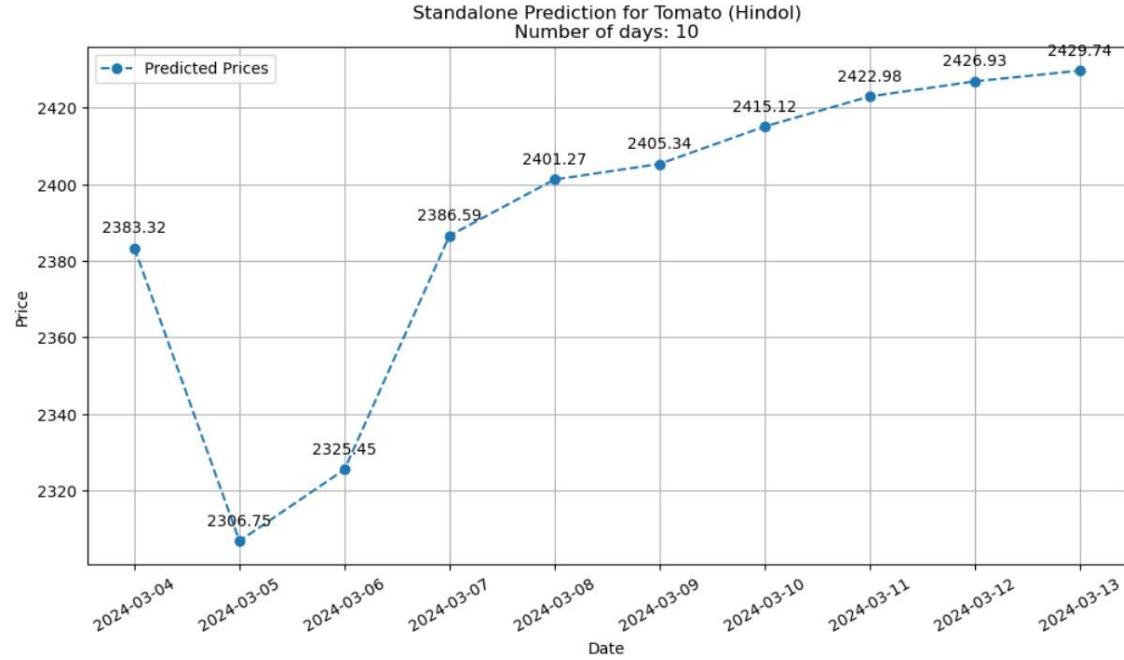
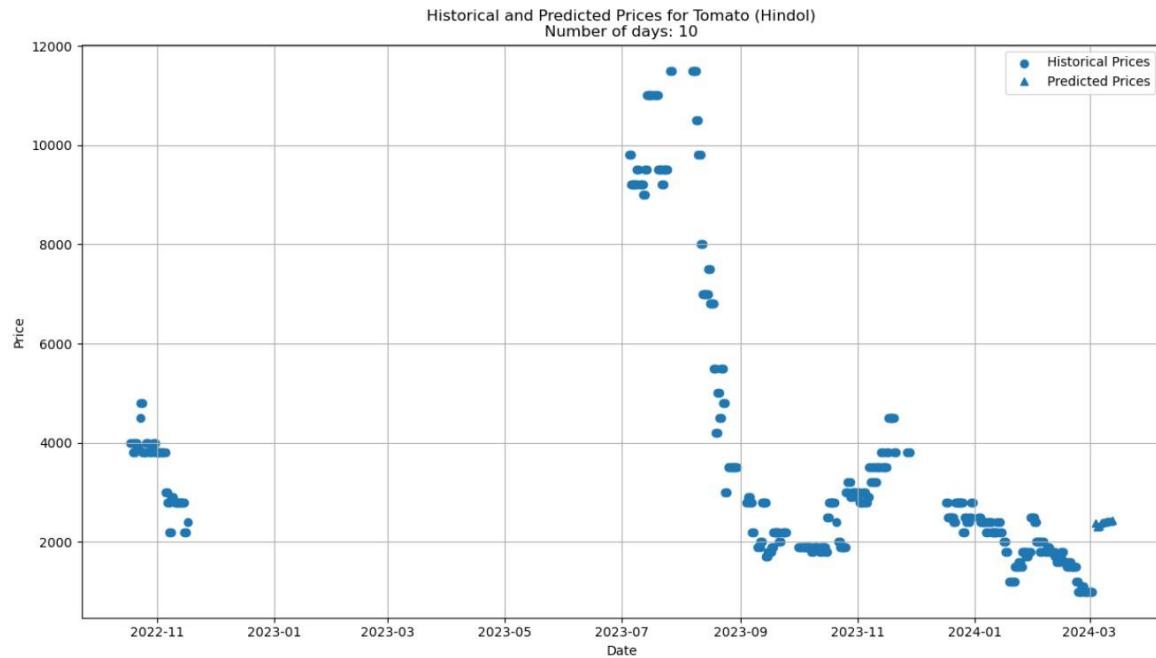
## Crop-Wise Trained Neural Networks



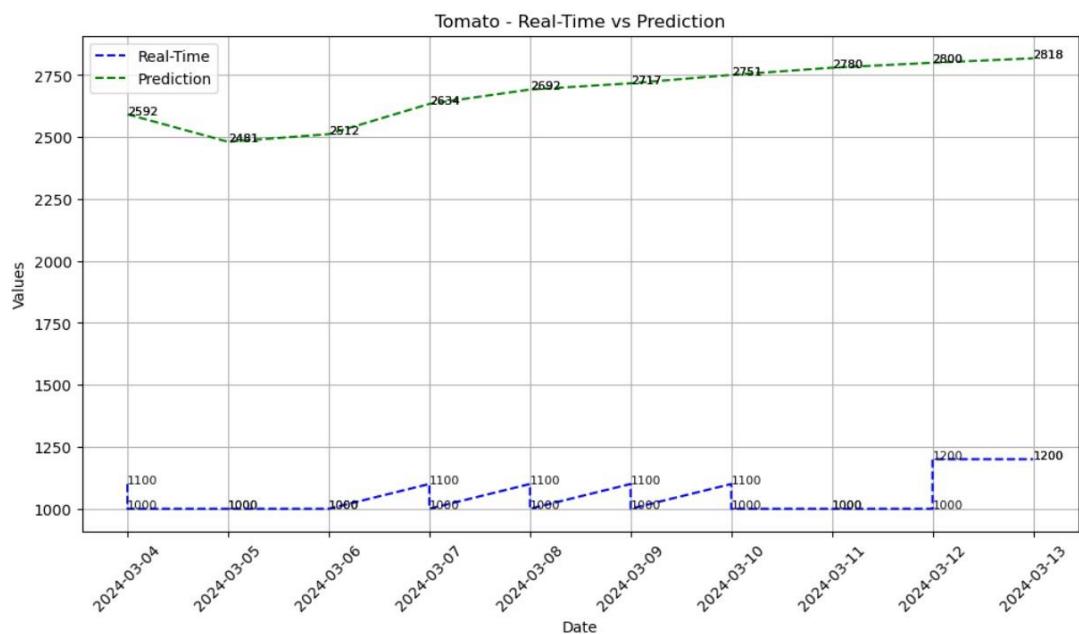
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### 3. Tomato:

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

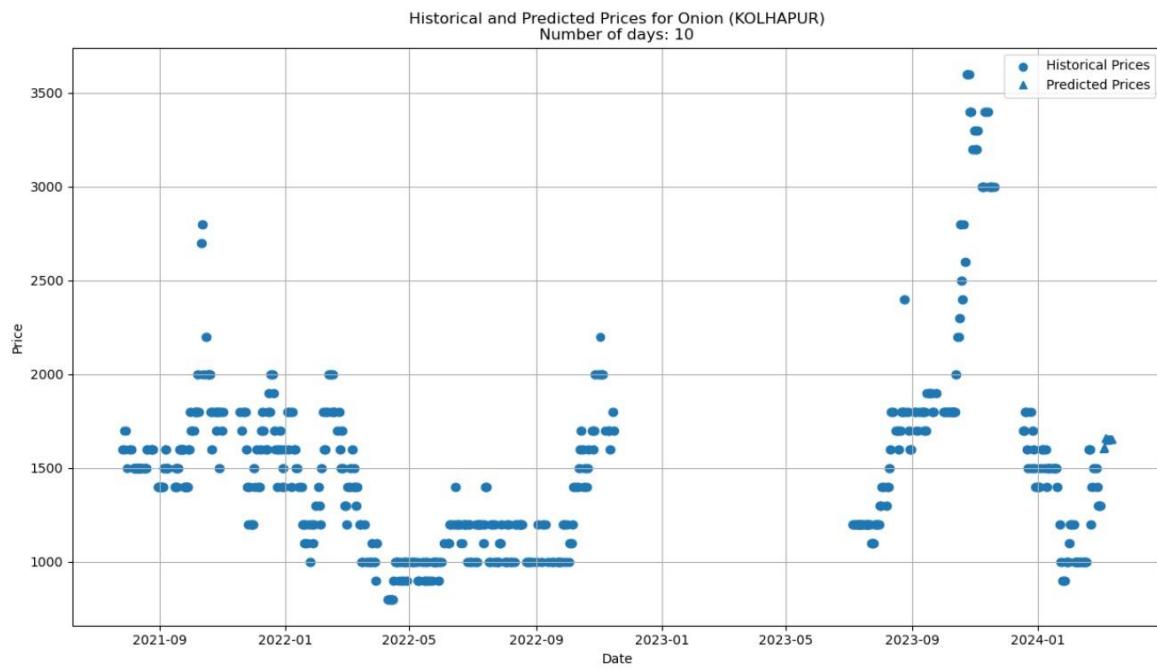


## Crop-Wise Trained Neural Networks



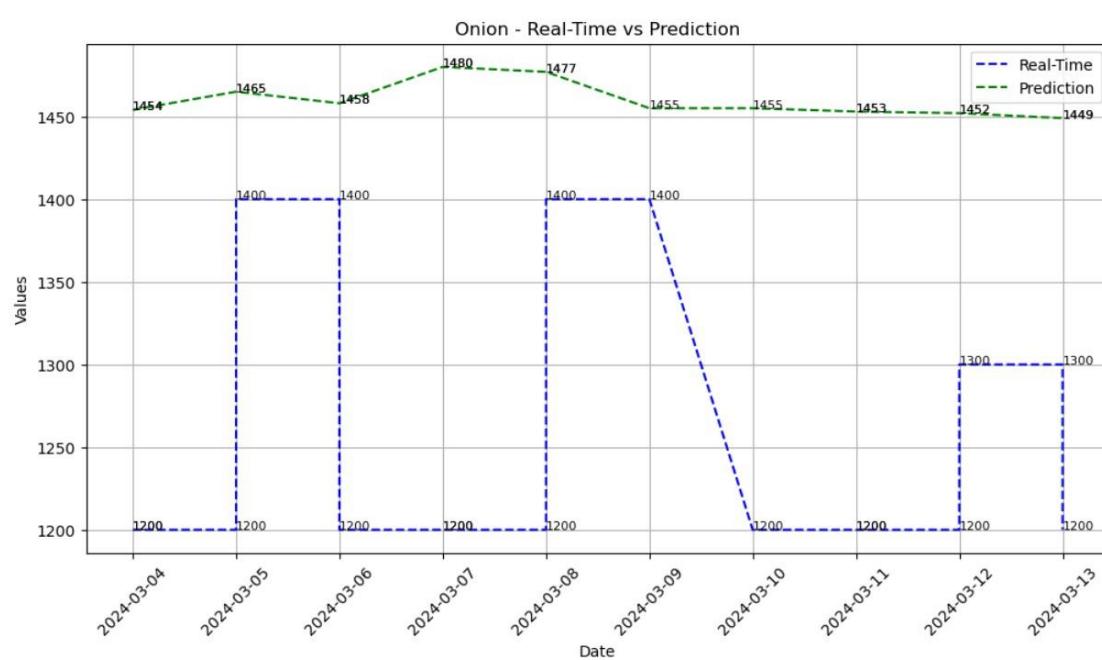
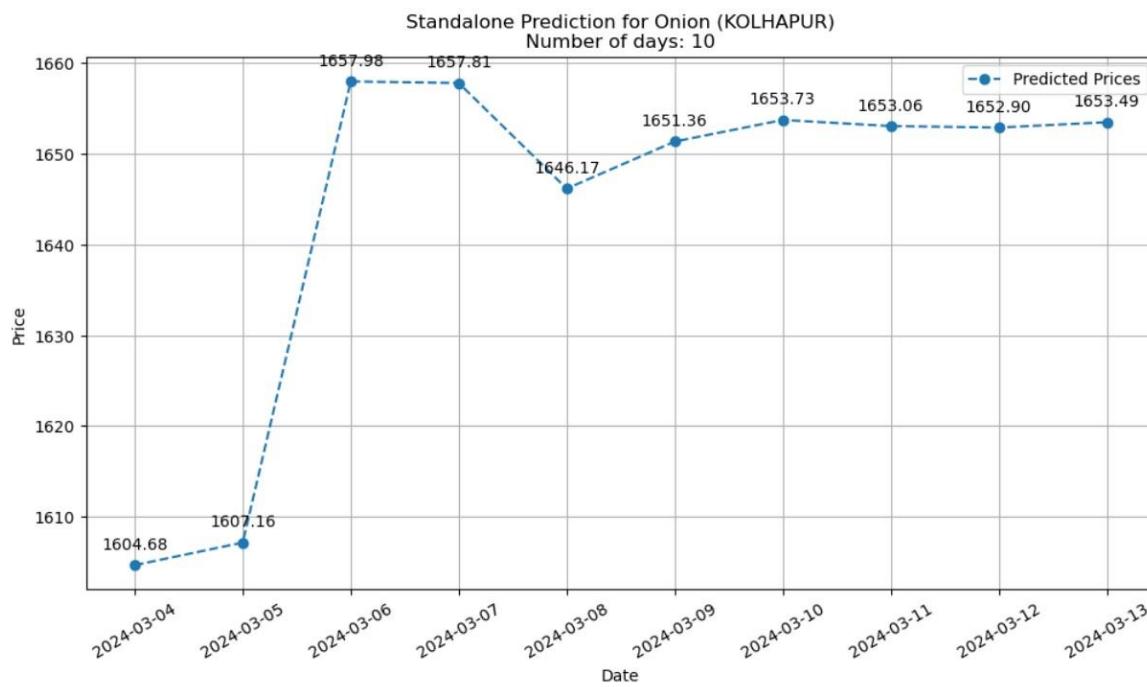
### 4. Onion:

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



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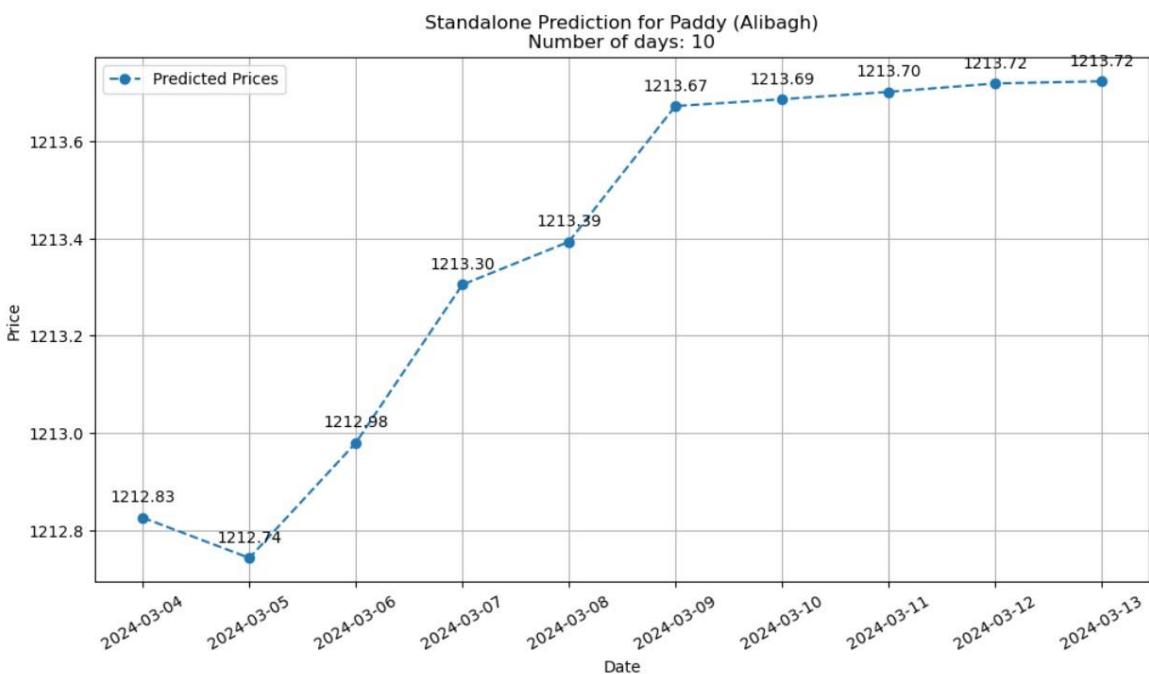
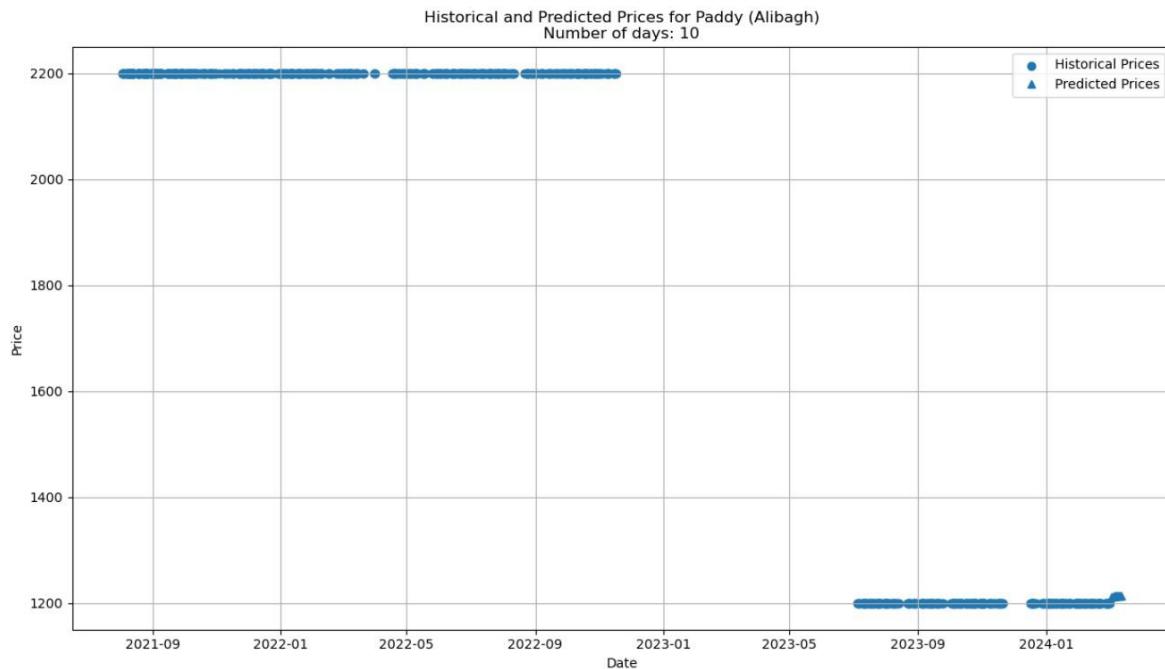
## Crop-Wise Trained Neural Networks



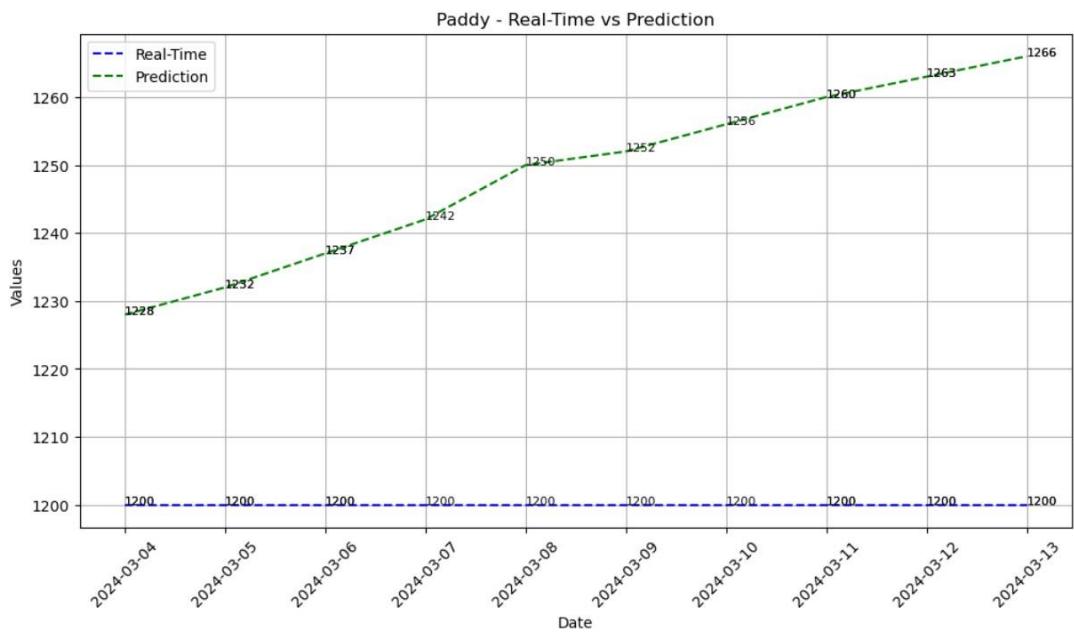
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## 5. Paddy:

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

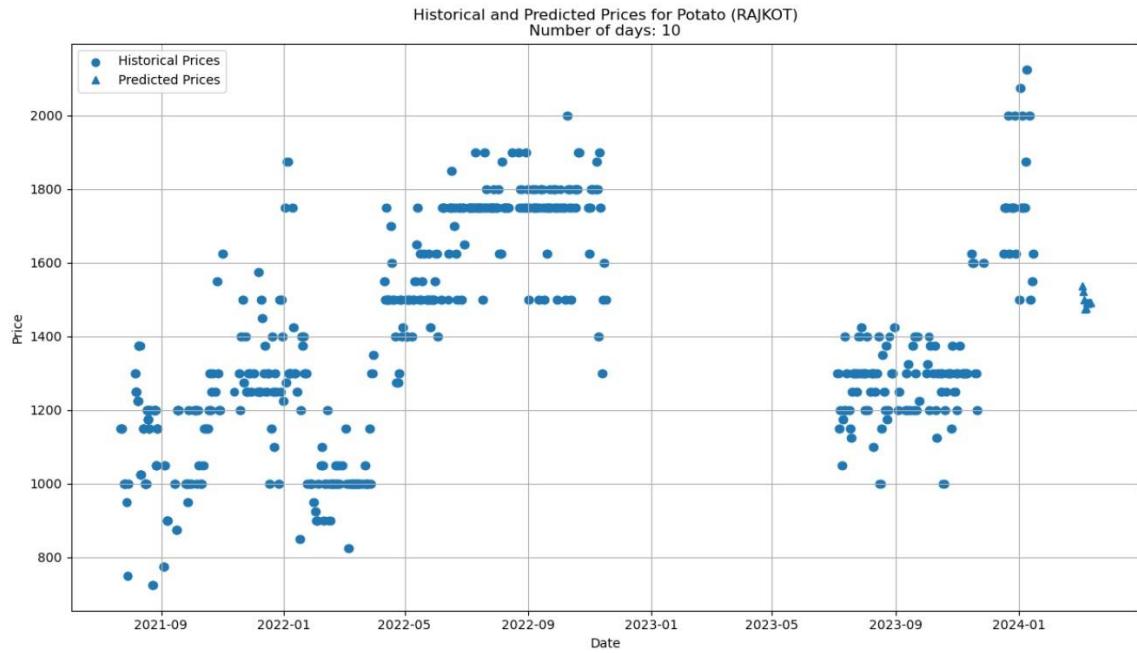


## Crop-Wise Trained Neural Networks



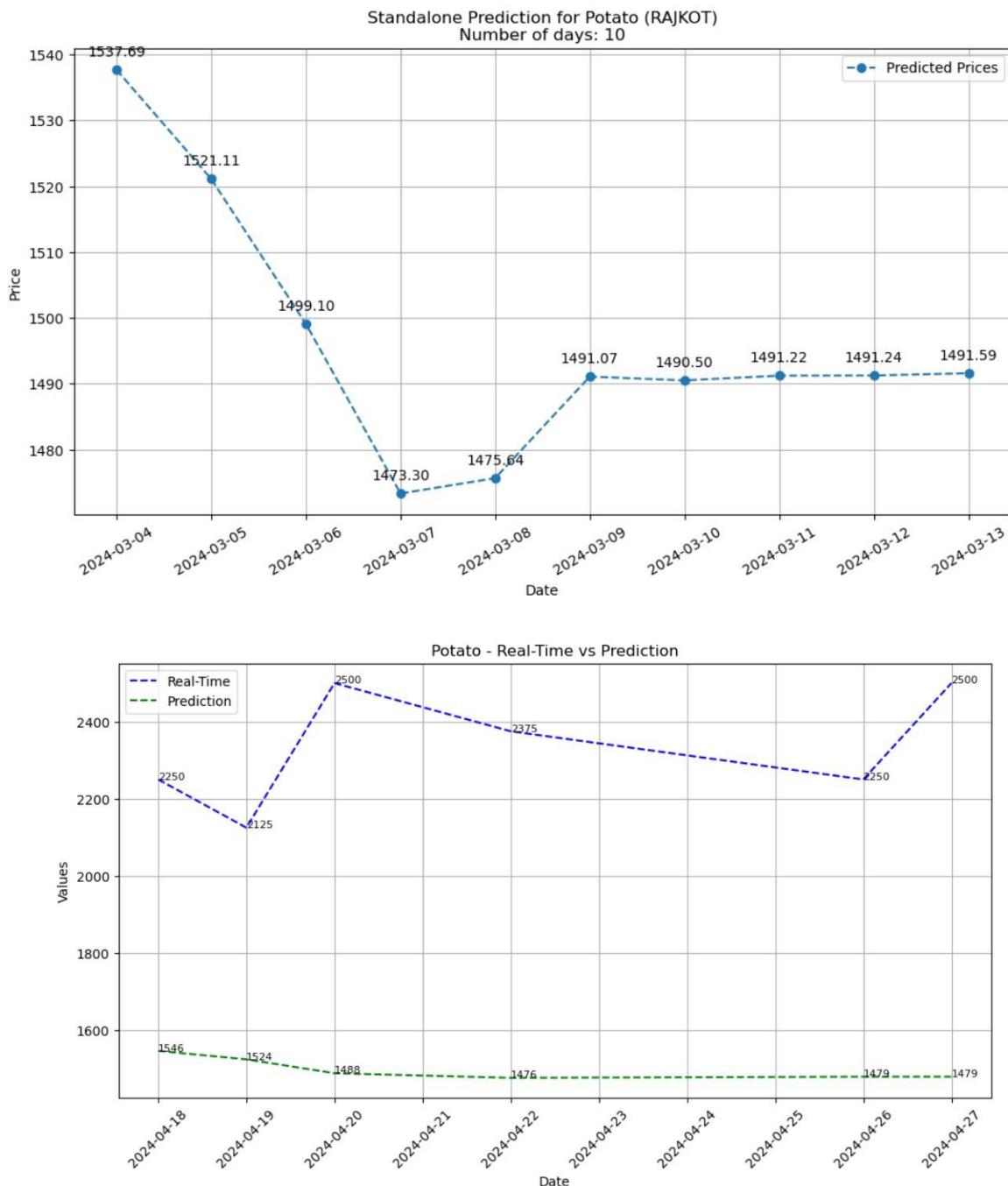
### 6. Potato:

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



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## Crop-Wise Trained Neural Networks



### 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.

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# Objective: To evaluate the performance of a Neural Network in predicting crop prices when fitted according to Paddy.

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## 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.

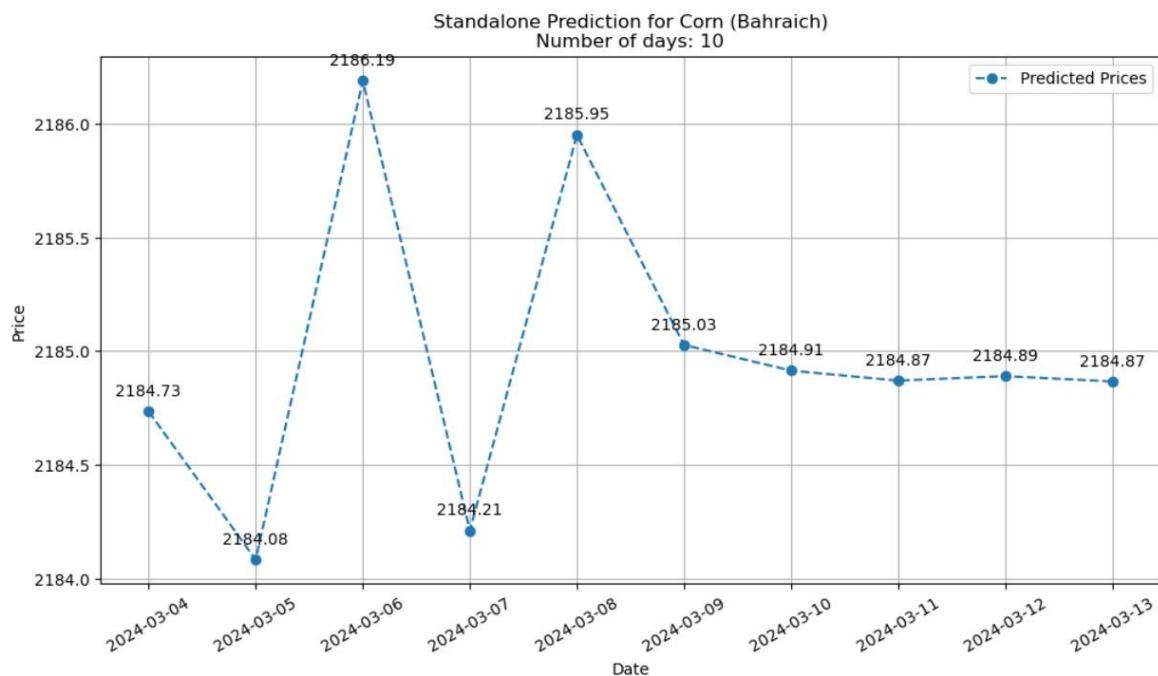
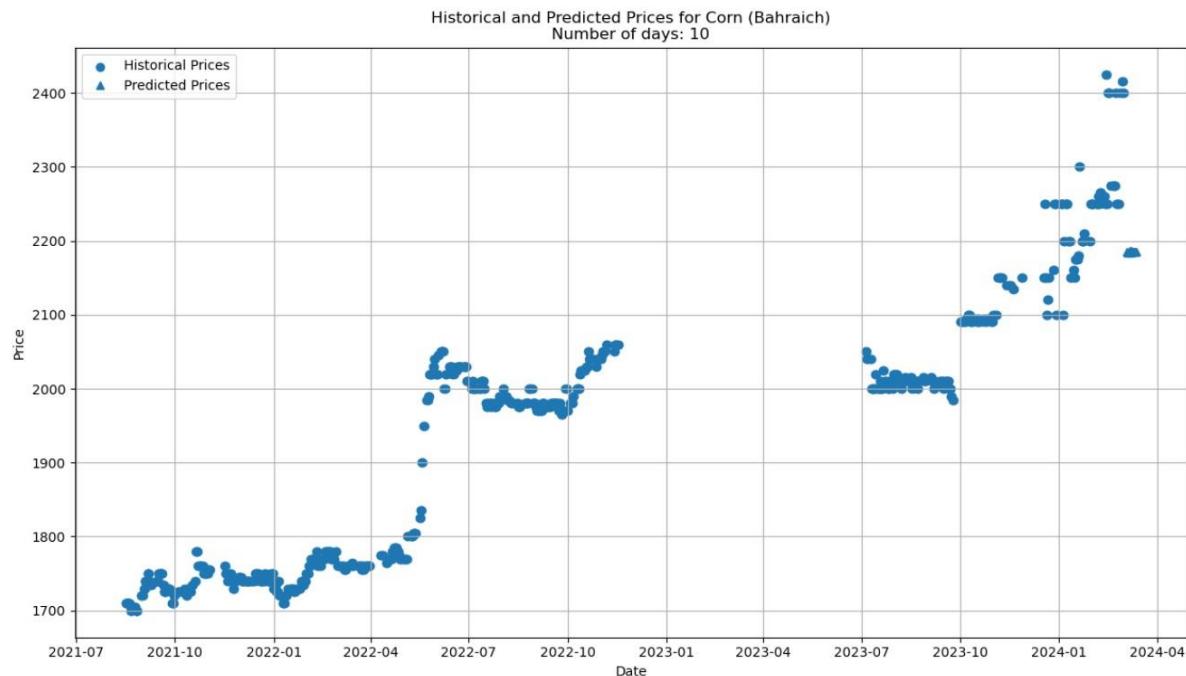
### 2. Descriptive Statistics:

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

## Key Findings and Output:

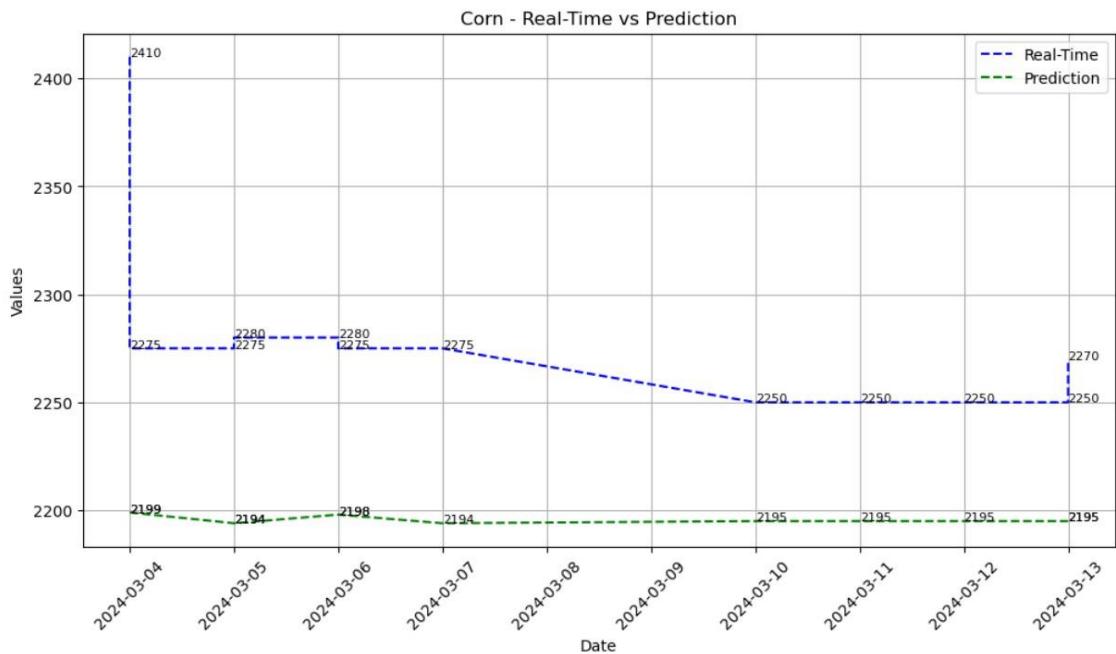
### 1. Corn:

- Average Real-Time Price: 2278.33
- Average Predicted Price: 2196.35
- Average Deviation: 81.98
- Average Accuracy: 96.40%



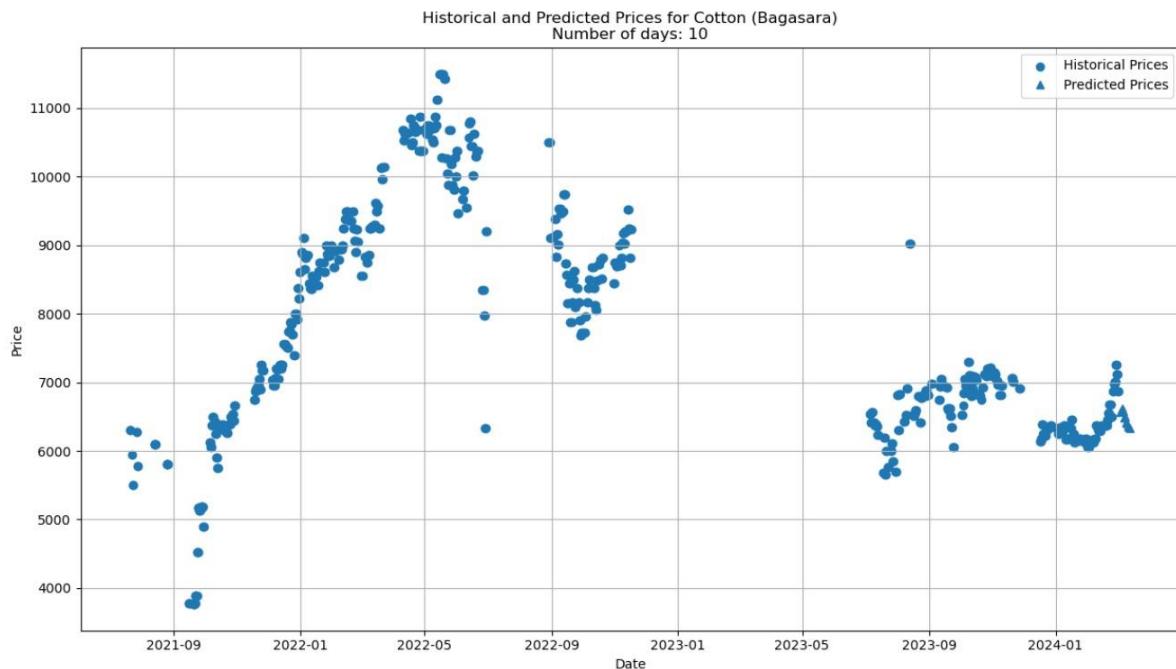
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## Crop-Wise Trained Neural Networks



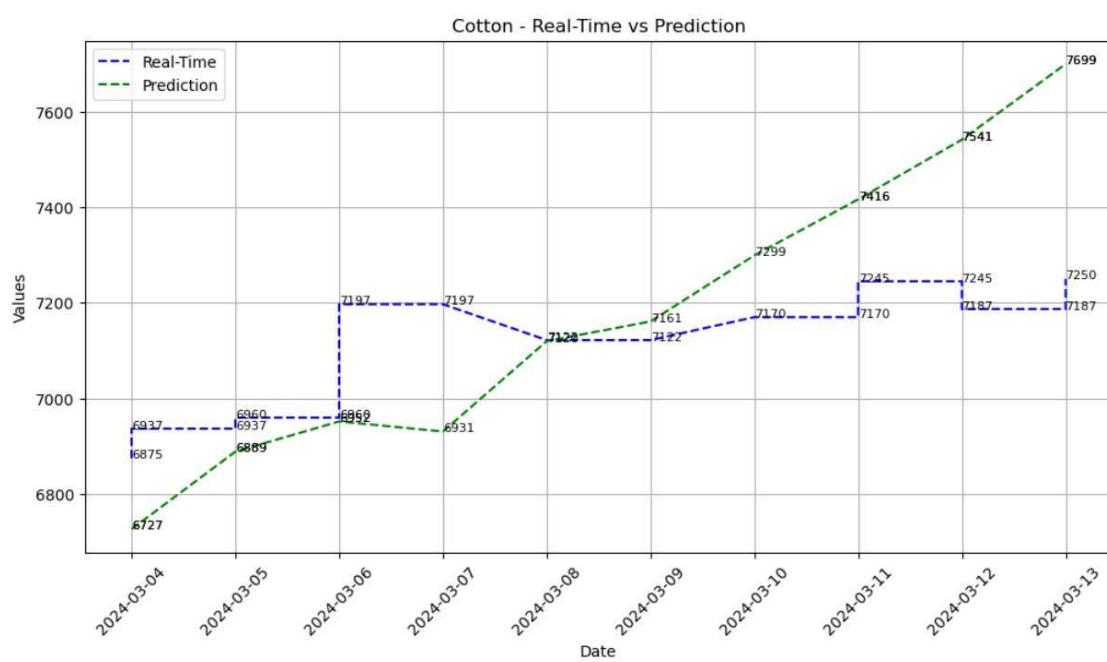
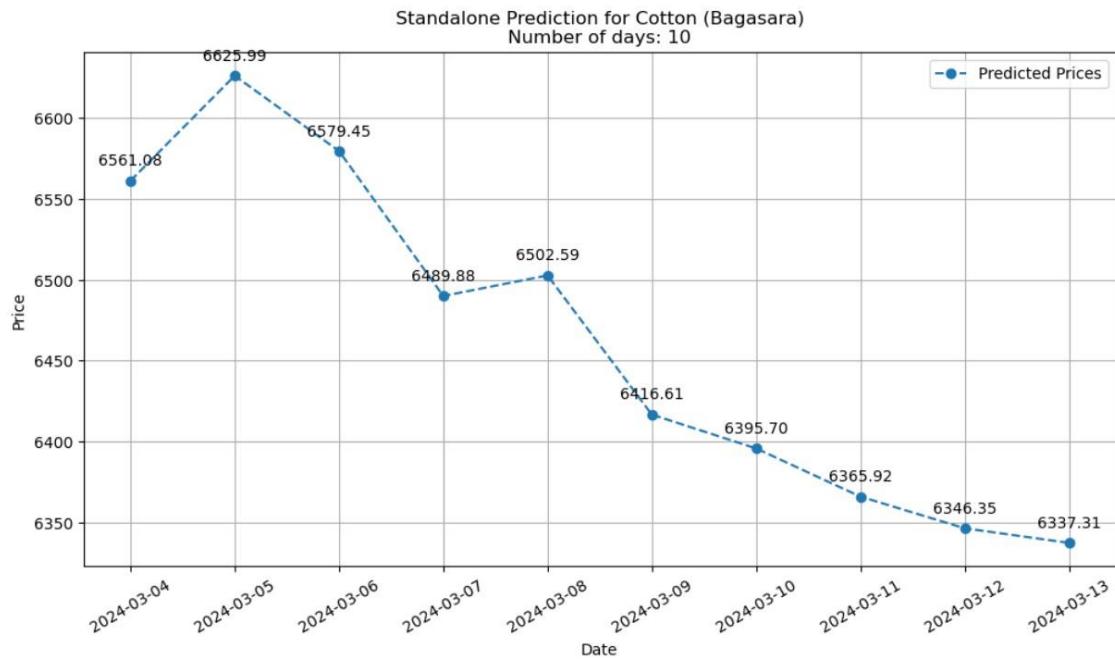
### 2. Cotton:

- Average Real-Time Price: 7110.06
- Average Predicted Price: 7185.30
- Average Deviation: 75.24
- Average Accuracy: 98.94%



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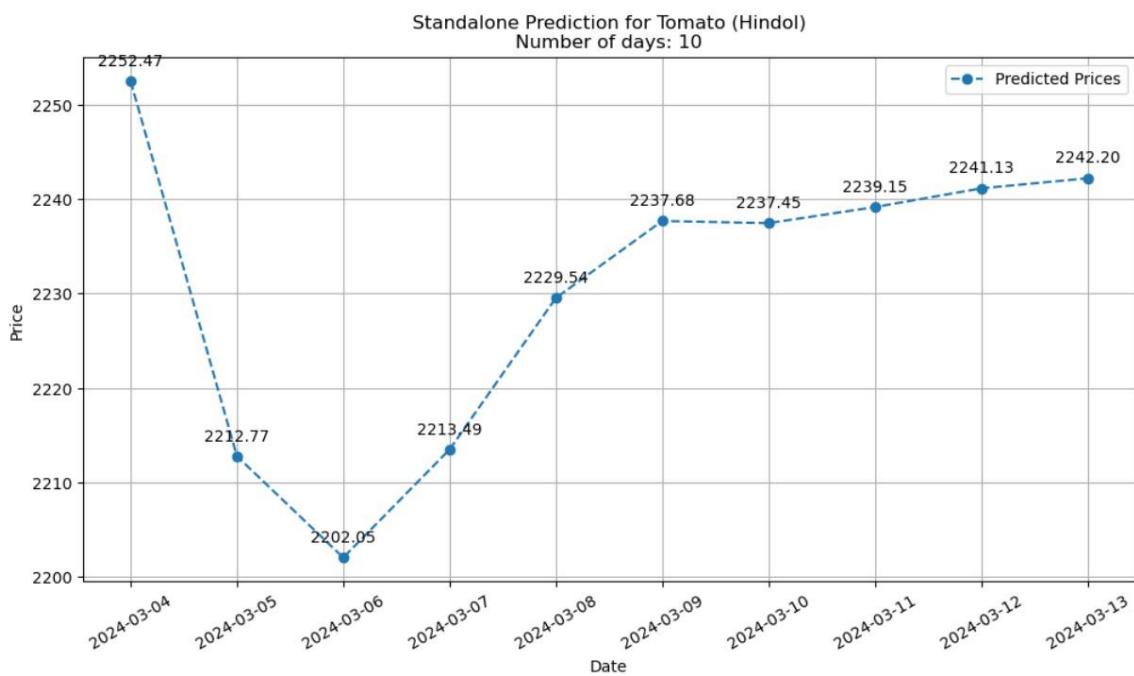
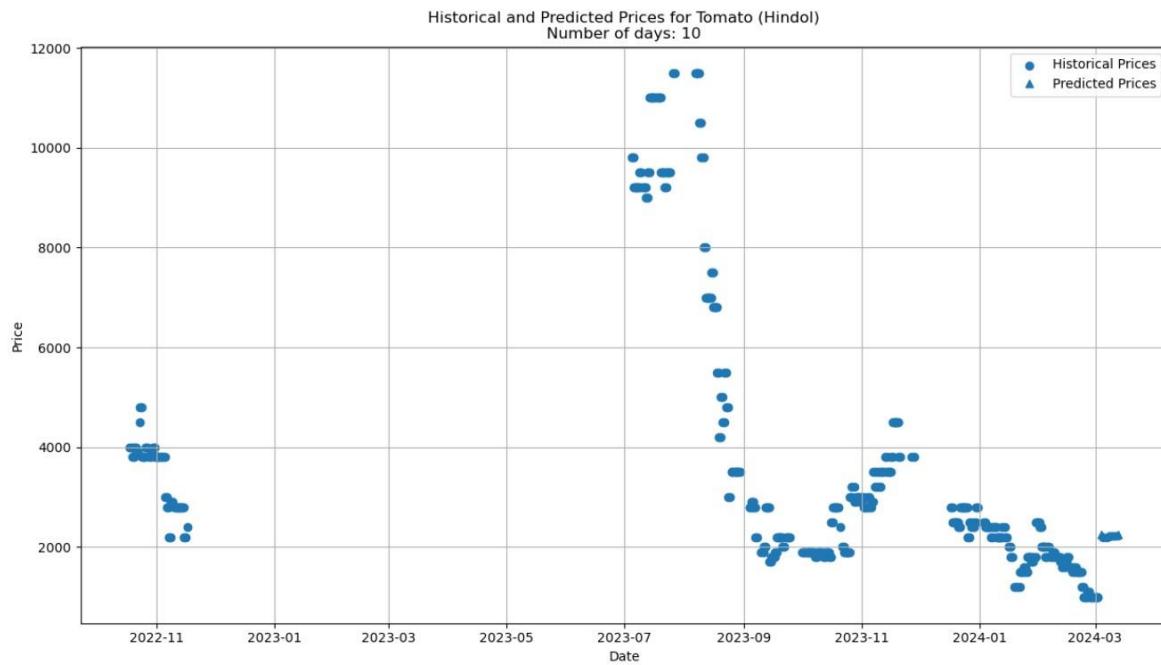
## Crop-Wise Trained Neural Networks



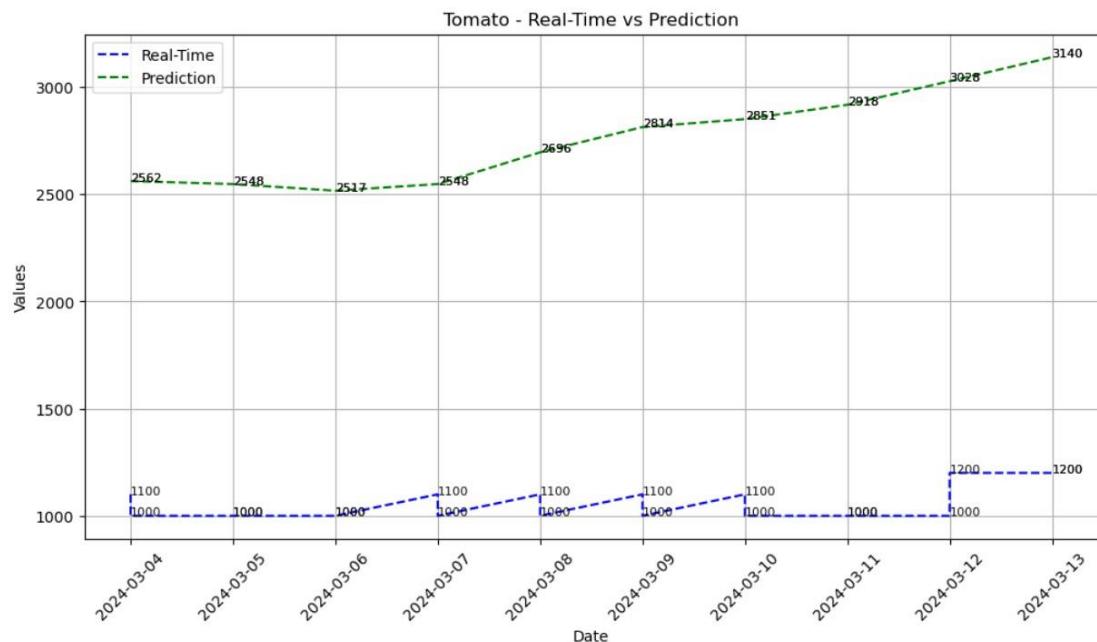
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### 3. Tomato:

- Average Real-Time Price: 1055.00
- Average Predicted Price: 2762.70
- Average Deviation: 1707.70
- Average Accuracy: -61.87% (Poor model performance)

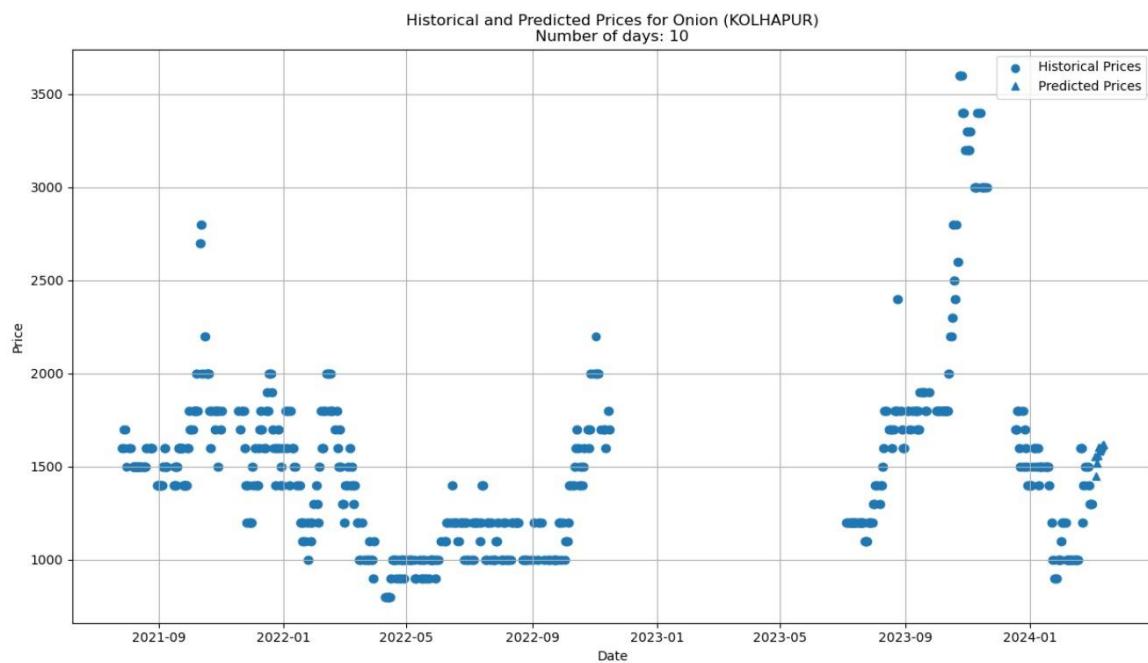


## Crop-Wise Trained Neural Networks



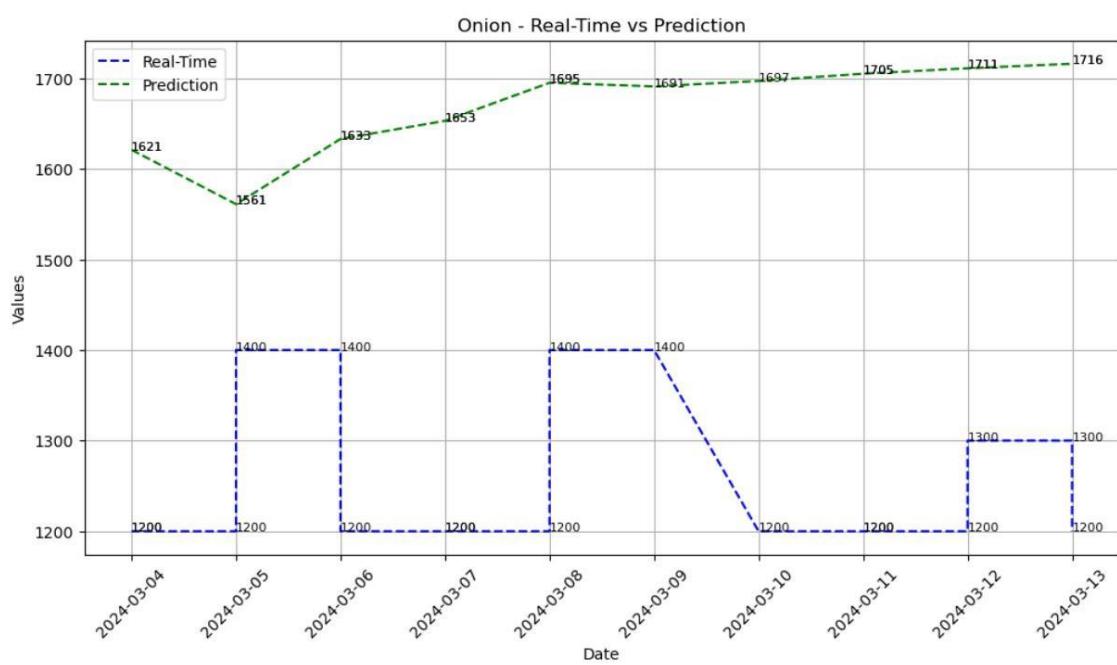
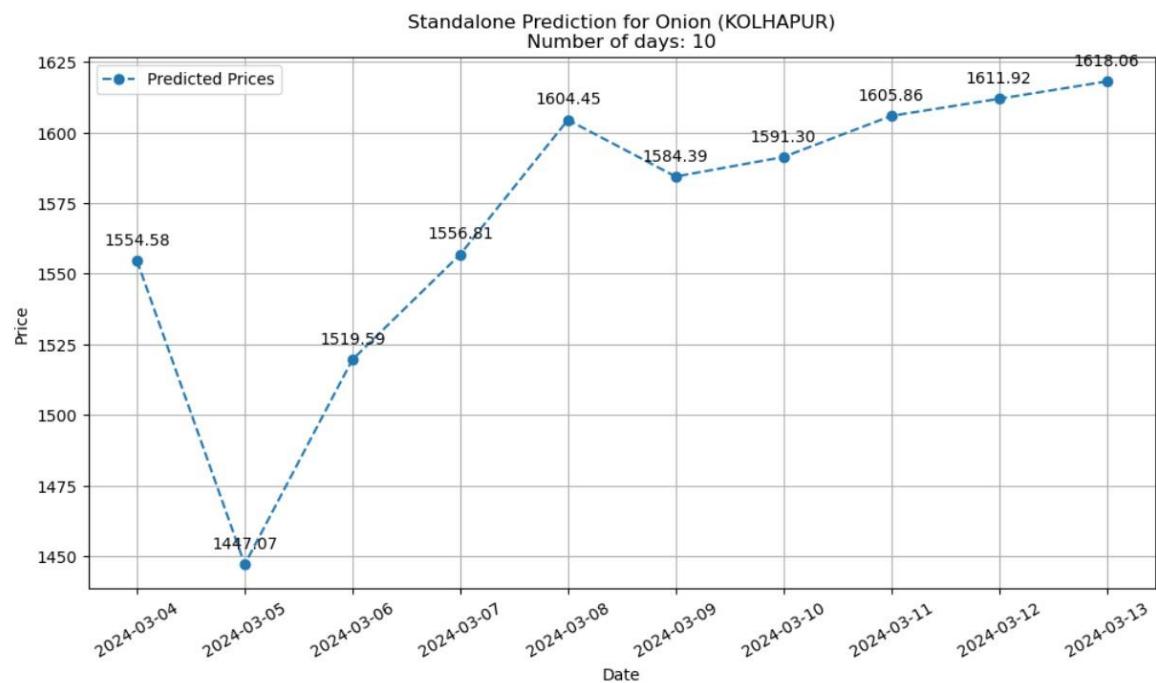
### 4. Onion:

- Average Real-Time Price: 1255.56
- Average Predicted Price: 1665.85
- Average Deviation: 410.29
- Average Accuracy: 67.32%



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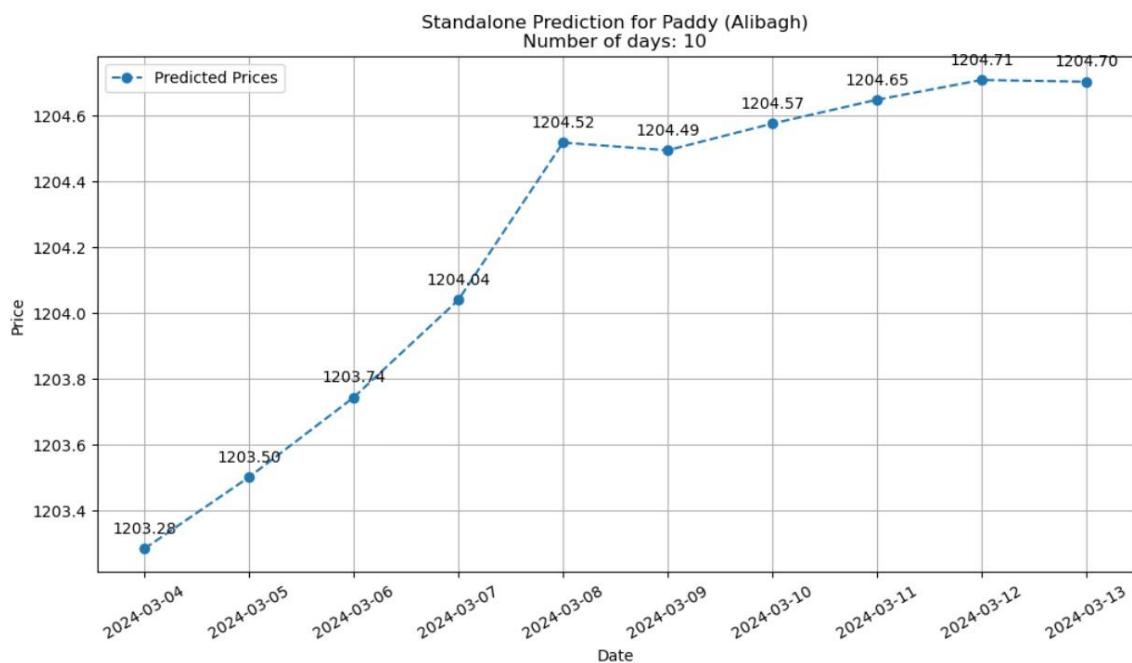
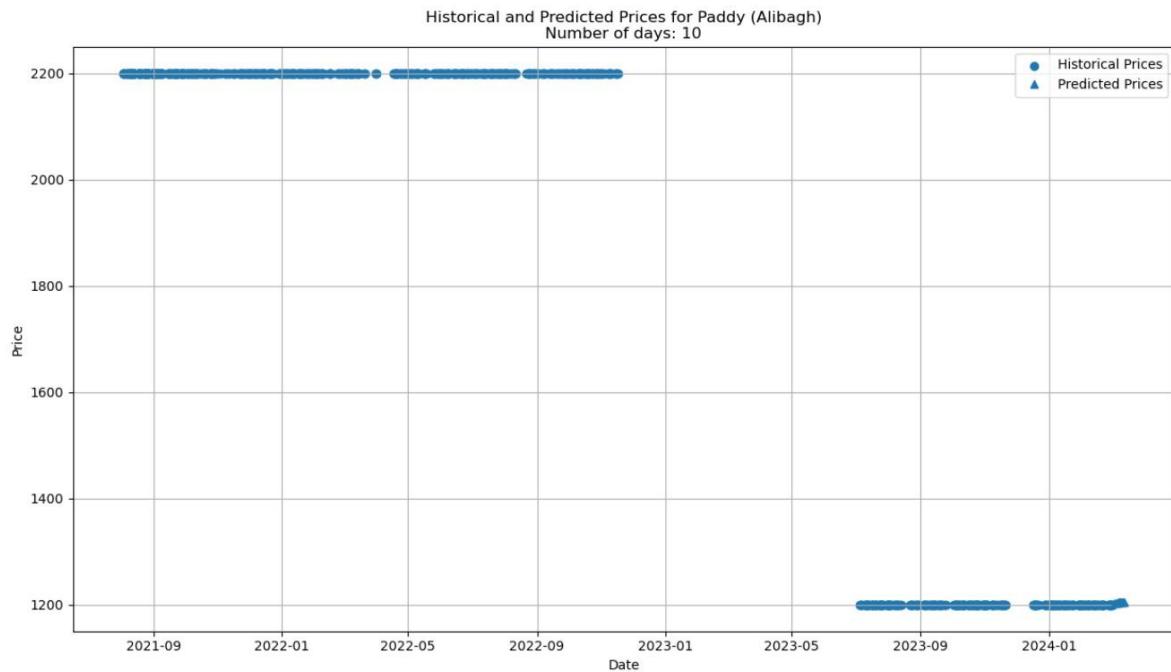
## Crop-Wise Trained Neural Networks

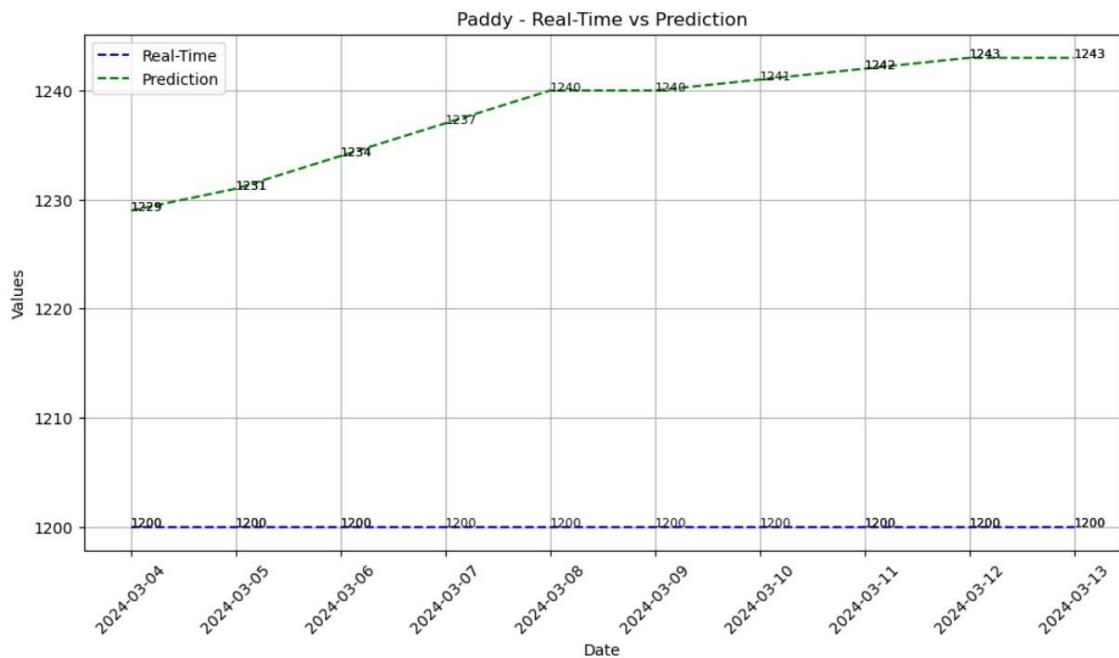


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### 5. Paddy:

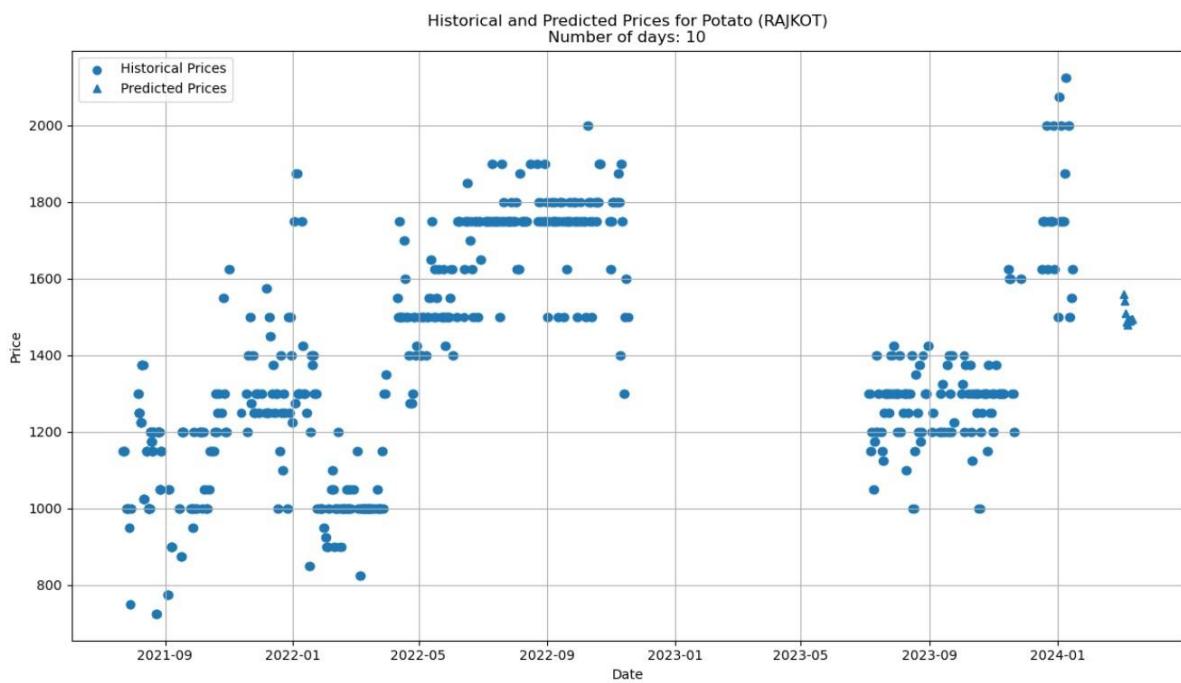
- Average Real-Time Price: 1200.00
- Average Predicted Price: 1238.12
- Average Deviation: 38.12
- Average Accuracy: 96.82%

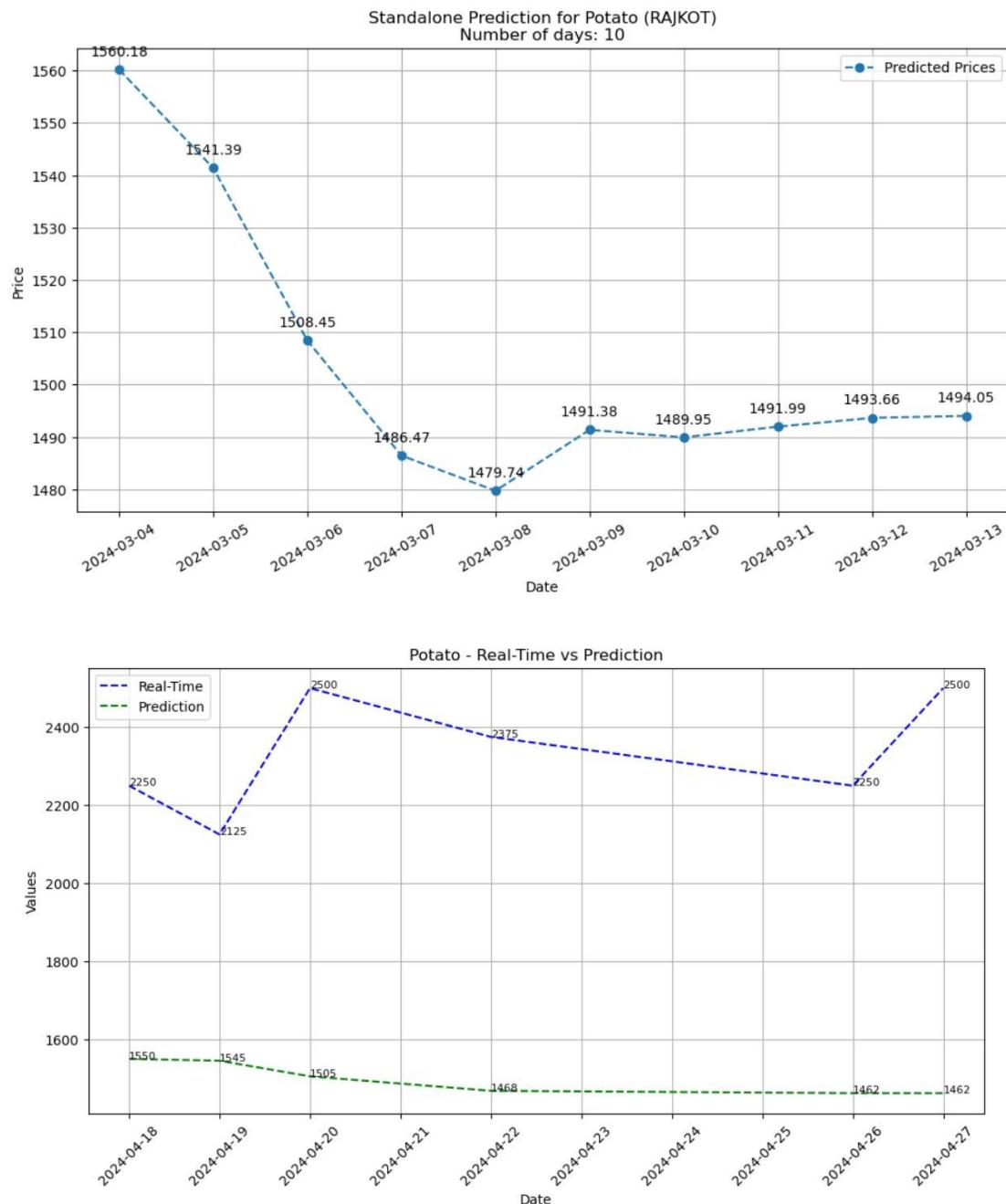




## 6. Potato:

- Average Real-Time Price: 2333.33
- Average Predicted Price: 1499.38
- Average Deviation: 833.95
- Average Accuracy: 64.26%





### Conclusion:

The model shows high accuracy for predicting cotton (98.94%), corn (96.40%), and paddy (96.82%) 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.

# Objective: To evaluate the performance of a Neural Network in predicting crop prices when fitted according to Potato.

## 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.

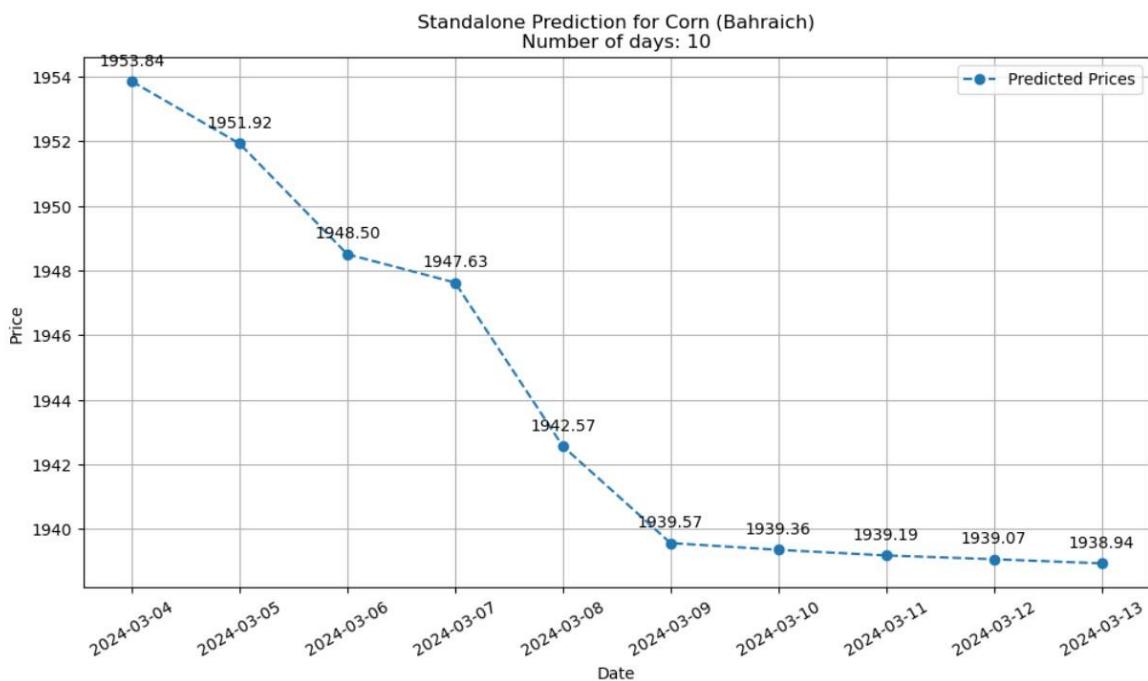
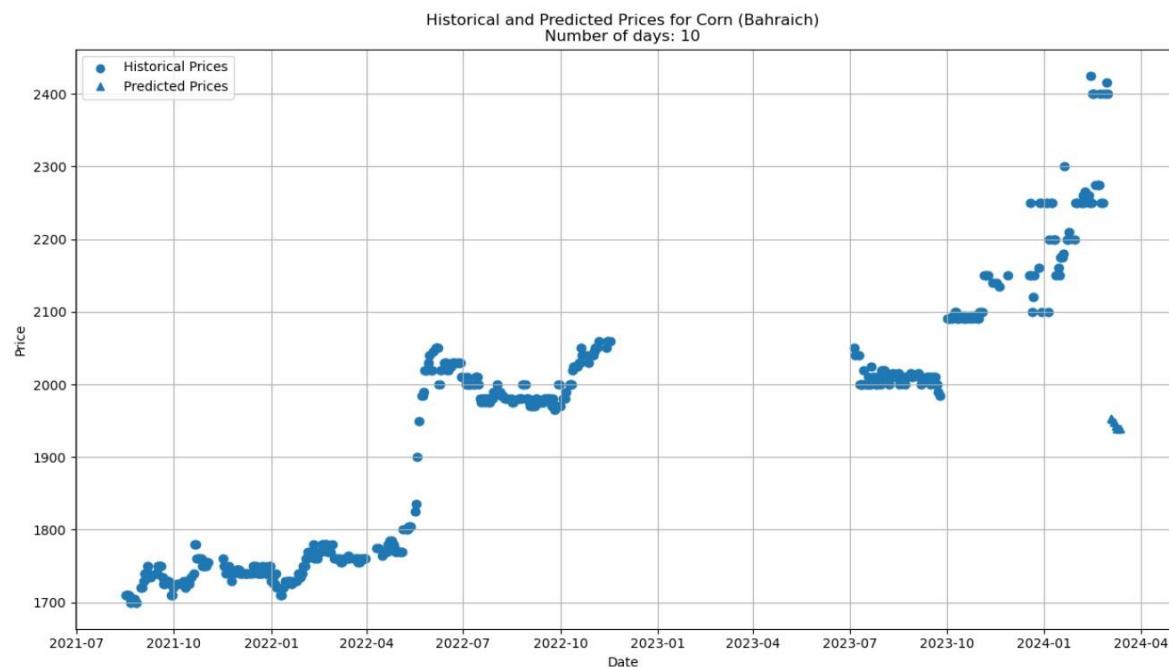
### 2. Descriptive Statistics:

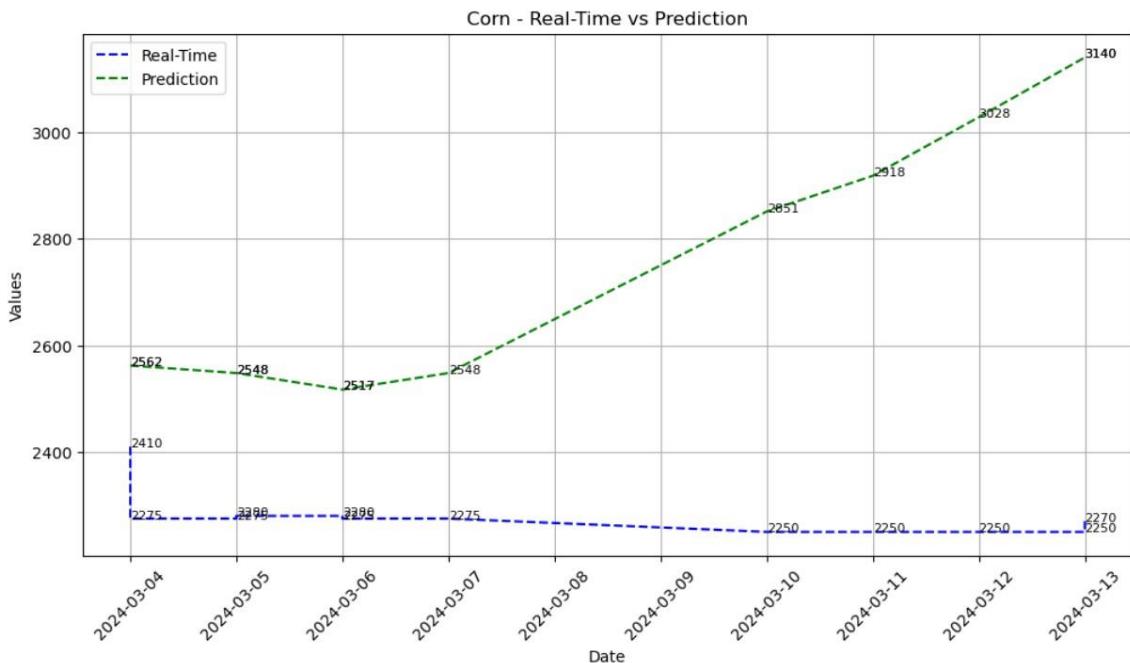
- Average real-time price, predicted price, deviation, and accuracy percentage are calculated for each crop.

## Key Findings and Output:

### 1. Corn:

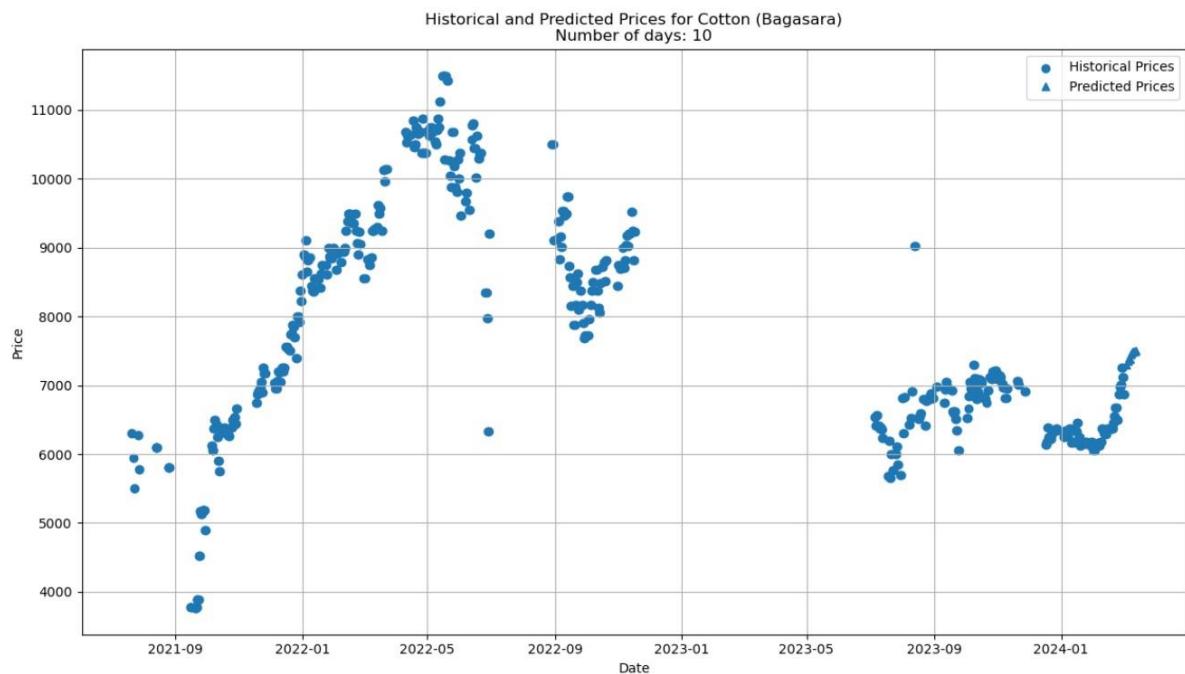
- Average Real-Time Price: 2278.33
- Average Predicted Price: 2740.333
- Average Deviation: 461.9998
- Average Accuracy: 79.722026%



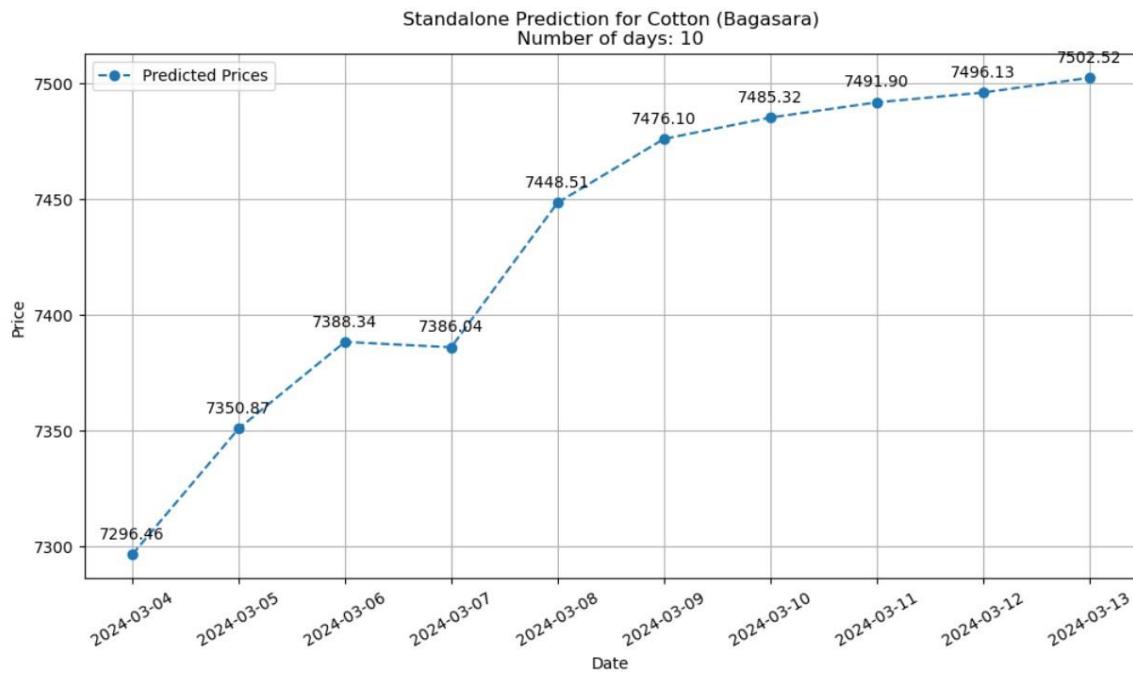


## 2. Cotton:

- Average Real-Time Price: 7110.06
- Average Predicted Price: 7546.396
- Average Deviation: 436.3333
- Average Accuracy: 93.863158%



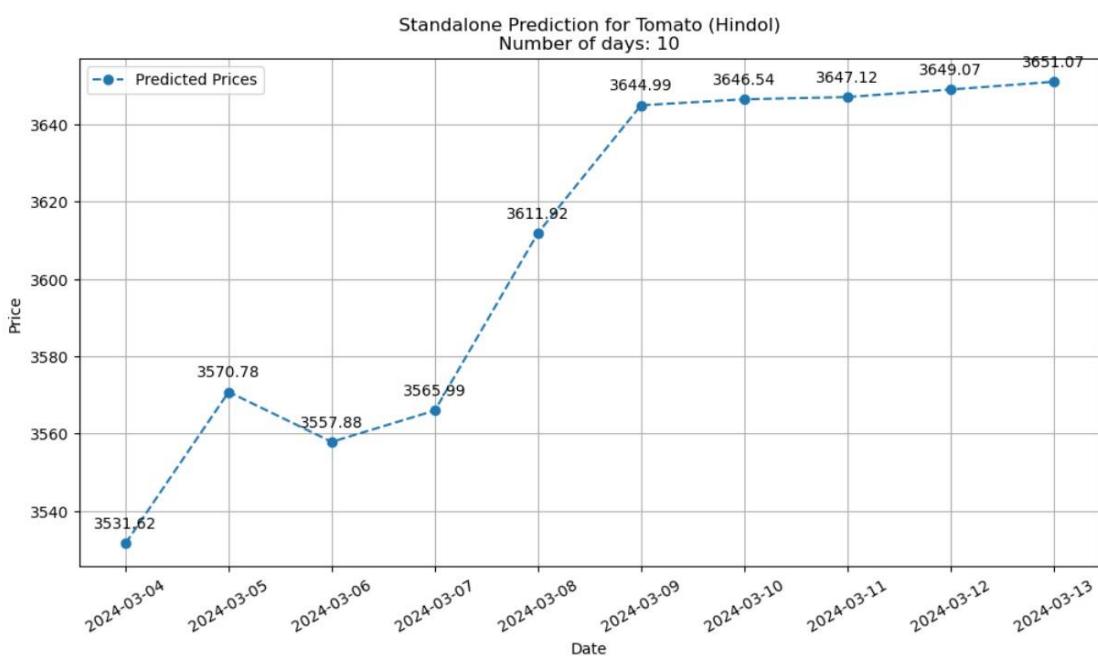
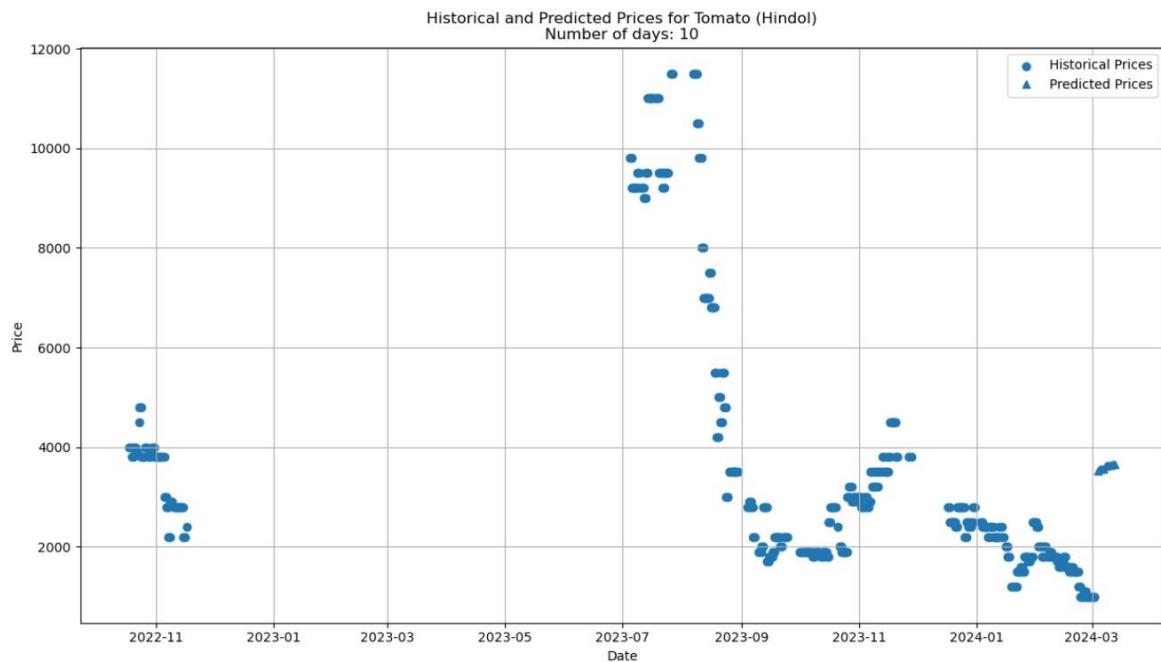
## Crop-Wise Trained Neural Networks



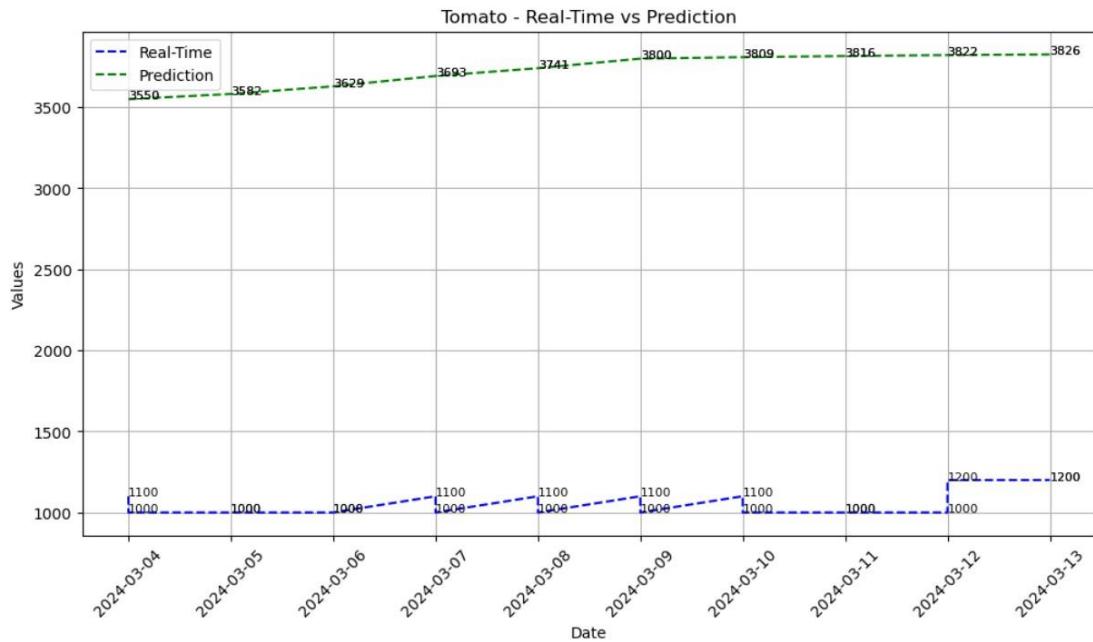
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### 3. Tomato:

- Average Real-Time Price: 1055.00
- Average Predicted Price: 3727.289
- Average Deviation: 2672.289
- Average Accuracy: 153.29758% (Poor model performance)

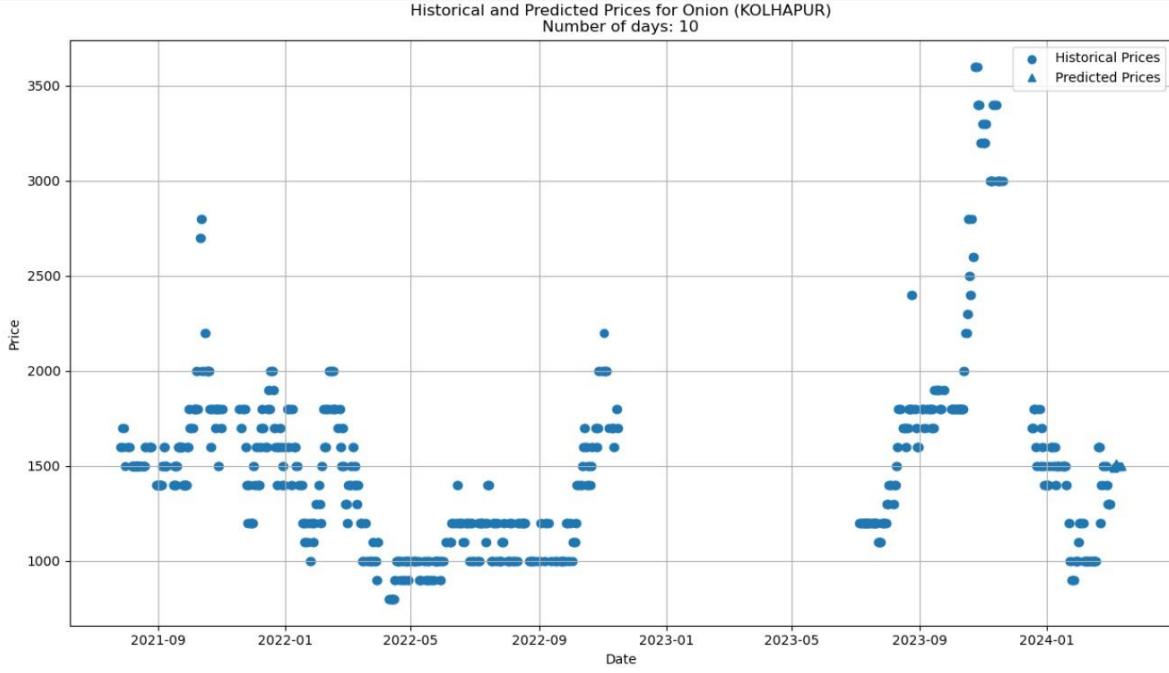


## Crop-Wise Trained Neural Networks



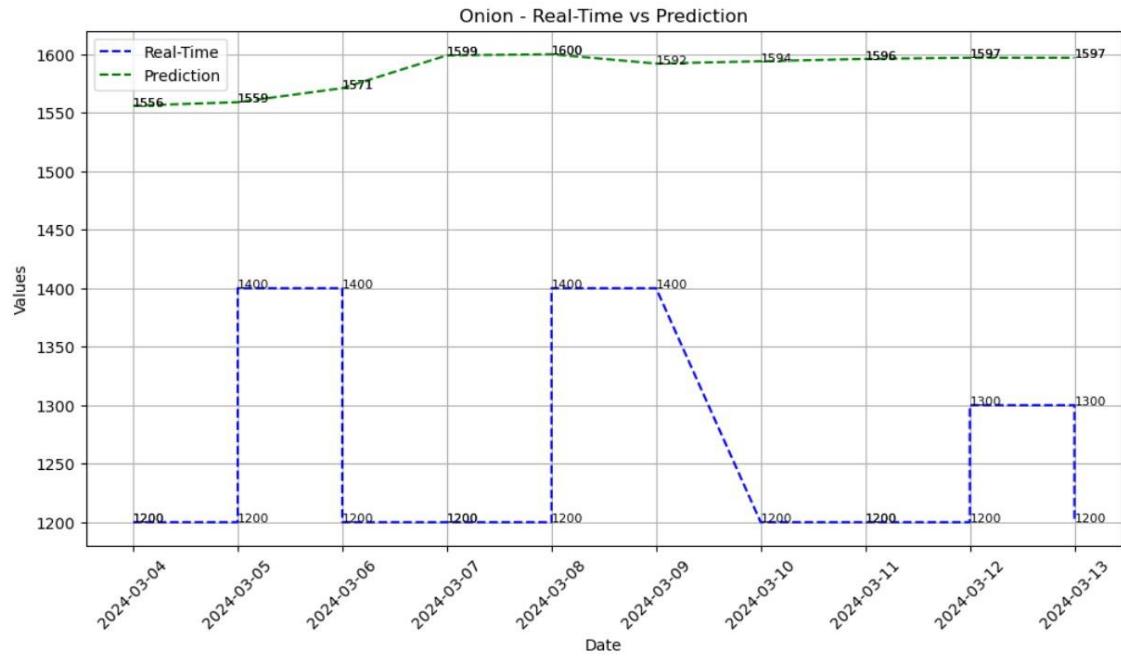
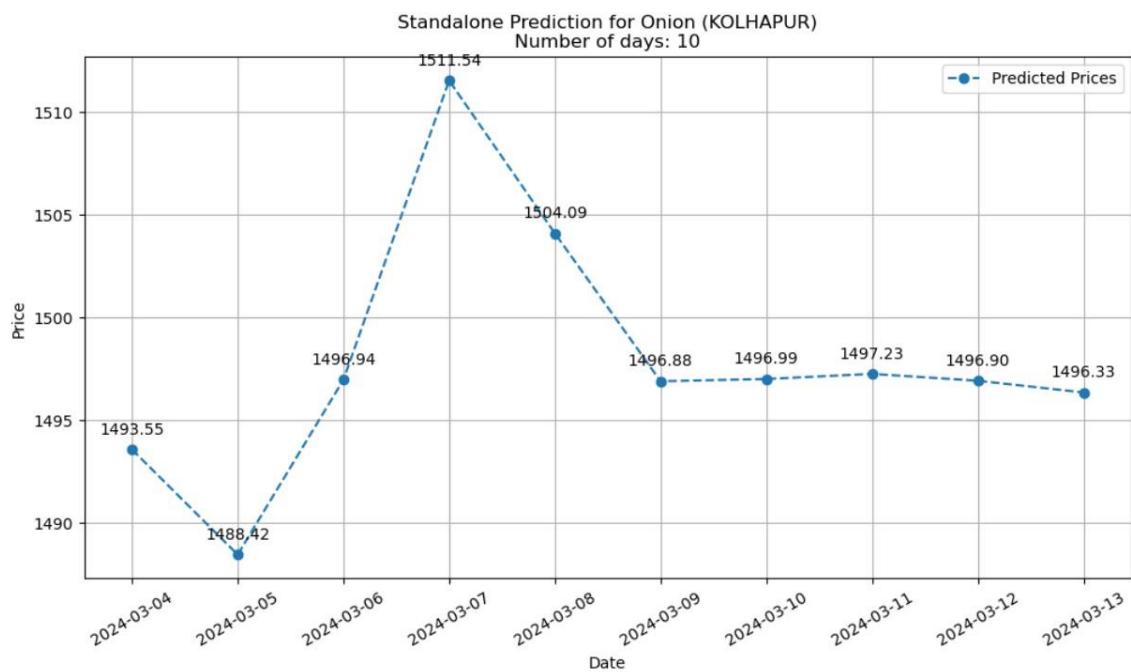
### 4. Onion:

- Average Real-Time Price: 1255.56
- Average Predicted Price: 1585.812
- Average Deviation: 330.256
- Average Accuracy: 73.696427%



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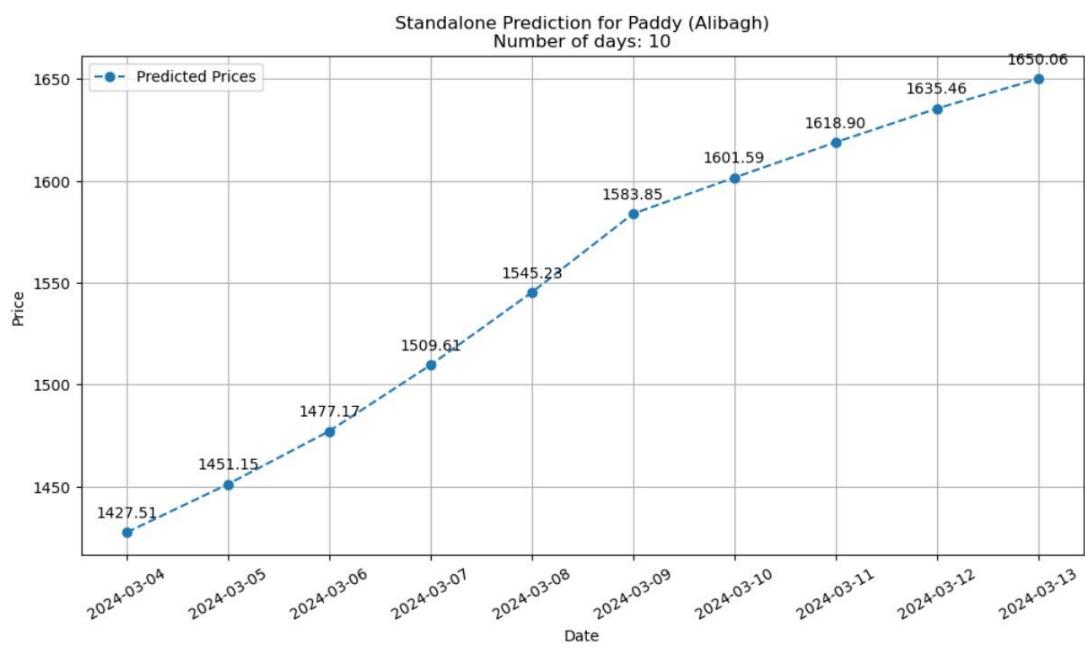
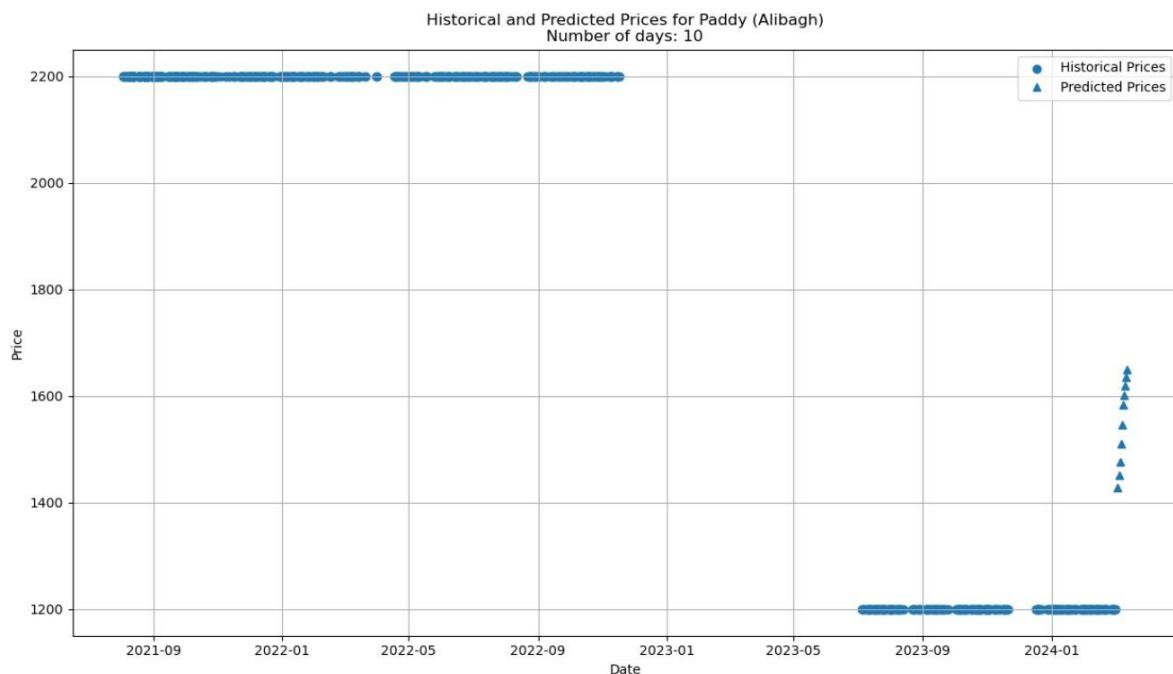
## Crop-Wise Trained Neural Networks



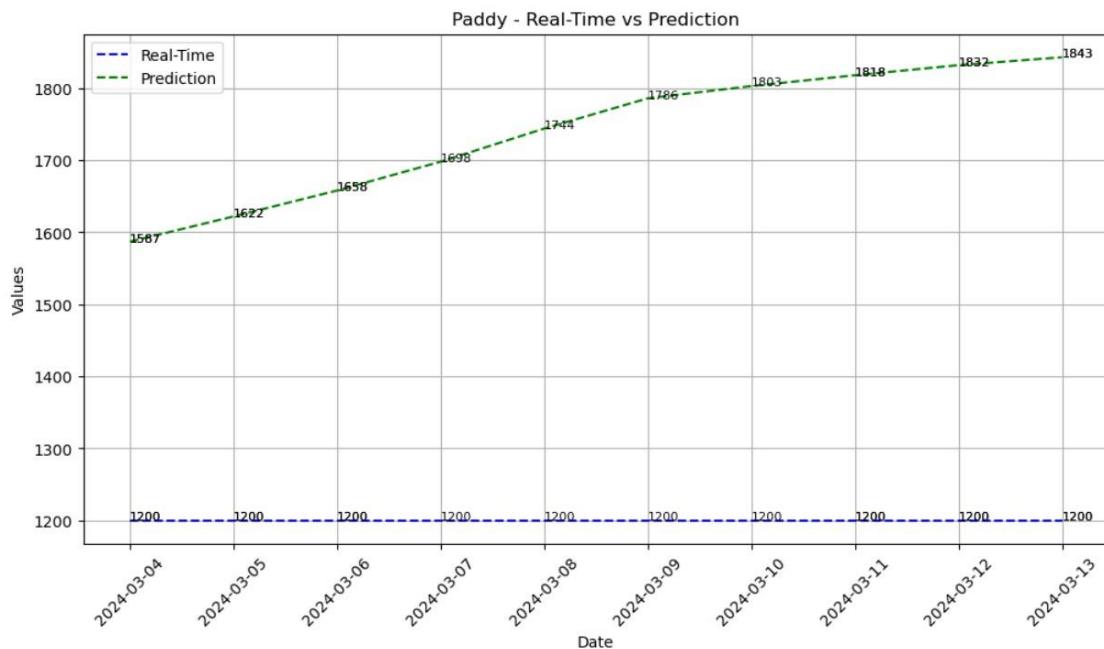
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### 5. Paddy:

- Average Real-Time Price: 1200.00
- Average Predicted Price: 1734.947
- Average Deviation: 534.9474
- Average Accuracy: 55.421046%

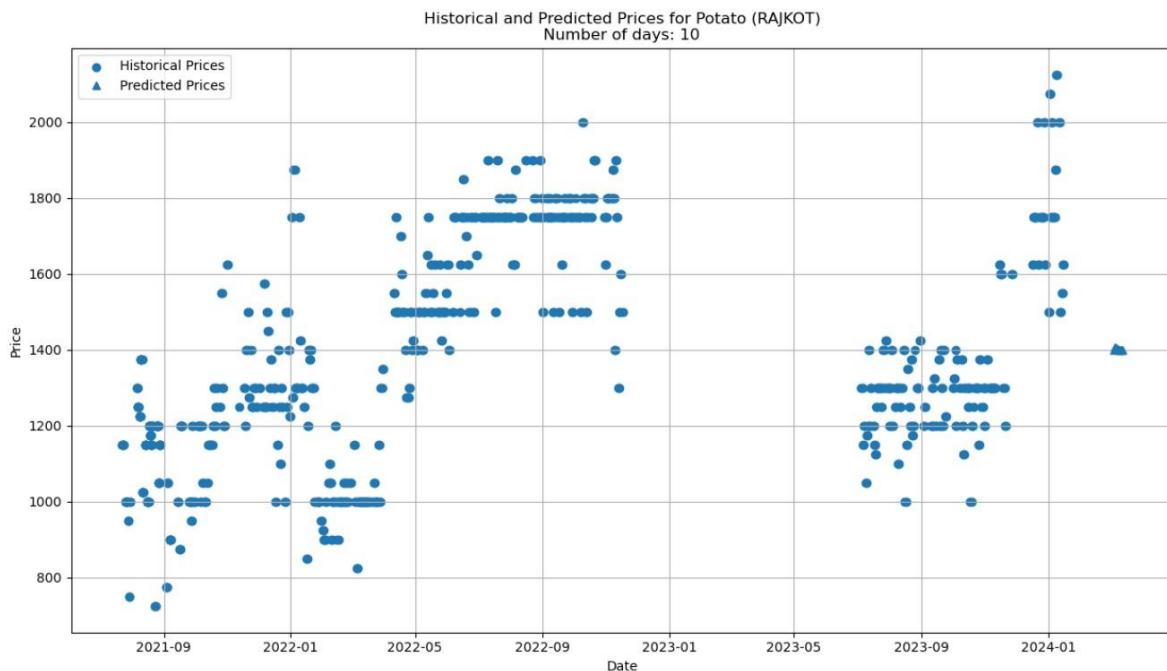


## Crop-Wise Trained Neural Networks



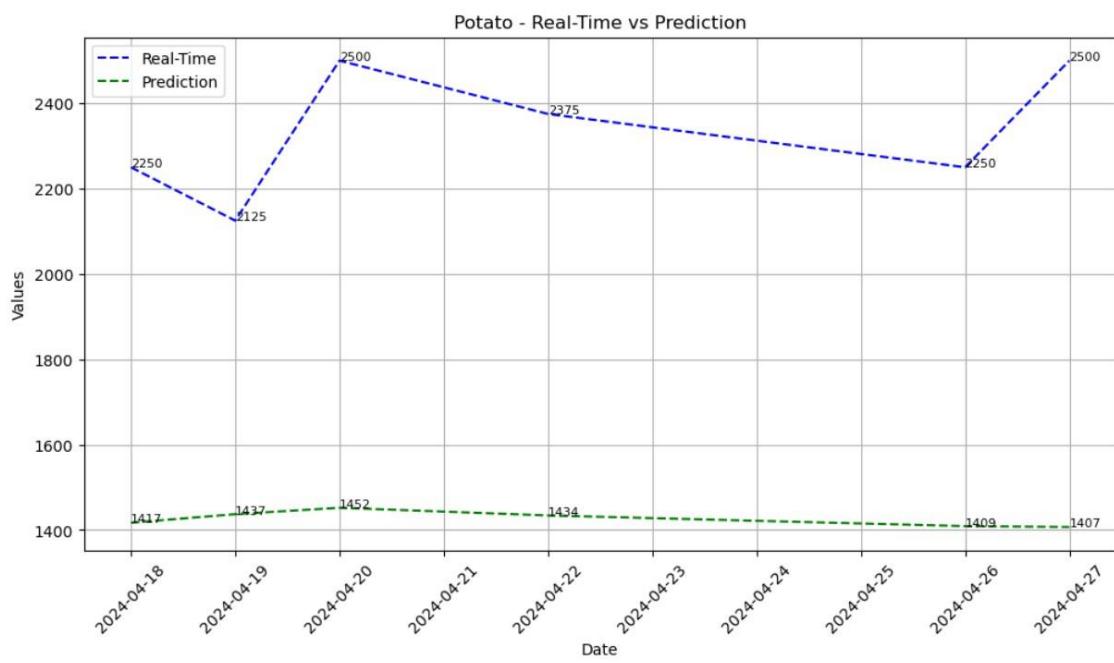
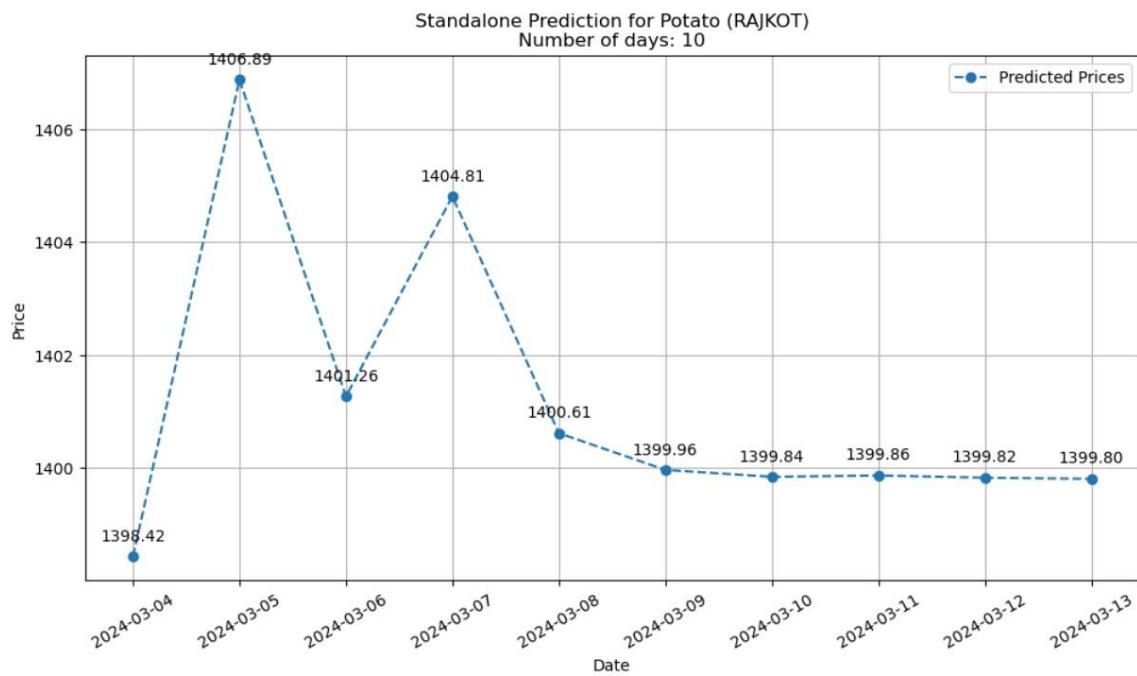
### 6. Potato:

- Average Real-Time Price: 2333.33
- Average Predicted Price: 1426.378
- Average Deviation: 906.9593
- Average Accuracy: 61.130316%



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## Crop-Wise Trained Neural Networks



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## Conclusion:

The model shows high accuracy for predicting cotton , corn , and paddy 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.

# Objective: To evaluate the performance of a Neural Network in predicting crop prices when fitted according to Tomato.

## Dataset:

The dataset contains the following columns:

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

## Data Overview:

The dataset covers multiple dates for each crop with corresponding real-time and predicted prices. For corn, the data spans from 04/03/2024 to 13/03/2024. Similar data is available for cotton, tomato, onion, paddy, and potato, with varying date ranges.

## Analysis Approach:

### 1. Accuracy Calculation:

- The accuracy of the model's predictions is calculated using the formula:

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

- For each crop and date, the deviation between the real-time price and the predicted price is computed.
- The accuracy percentage is derived to measure the model's performance.

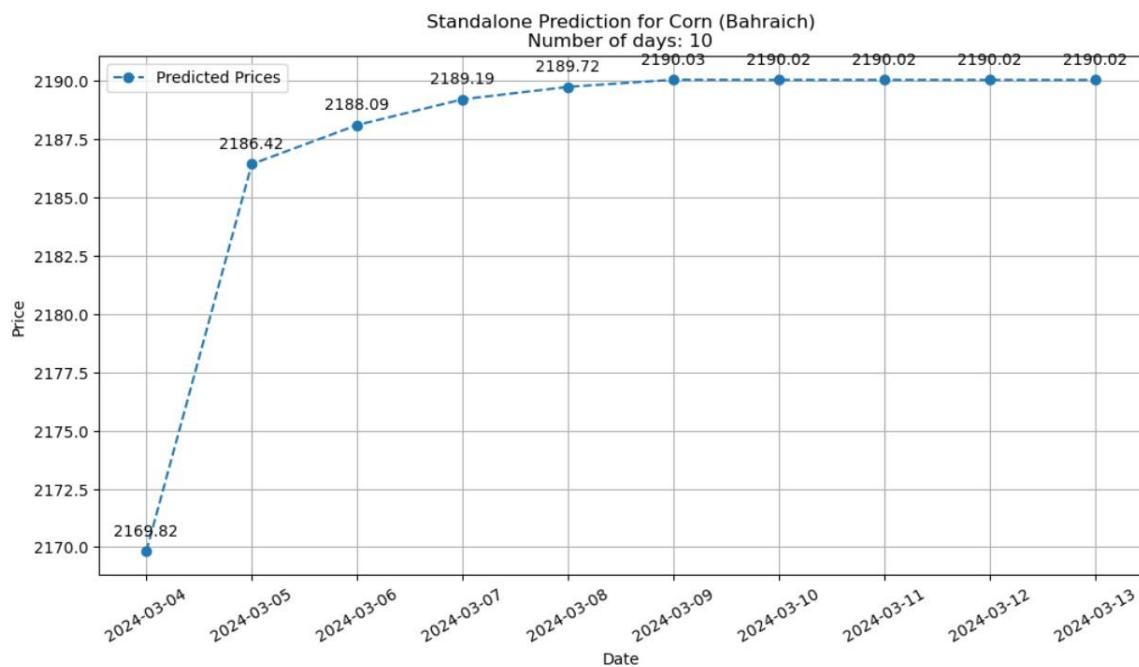
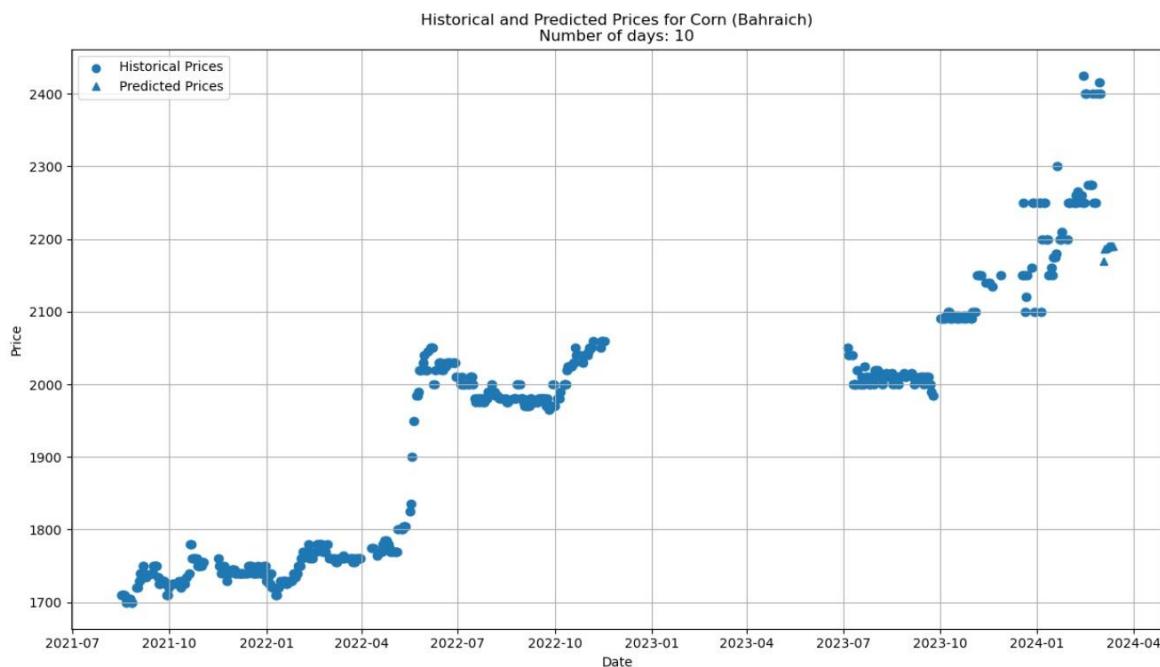
### 2. Descriptive Statistics:

- The average real-time price, predicted price, deviation, and accuracy percentage are computed for each crop to provide an overall performance summary.

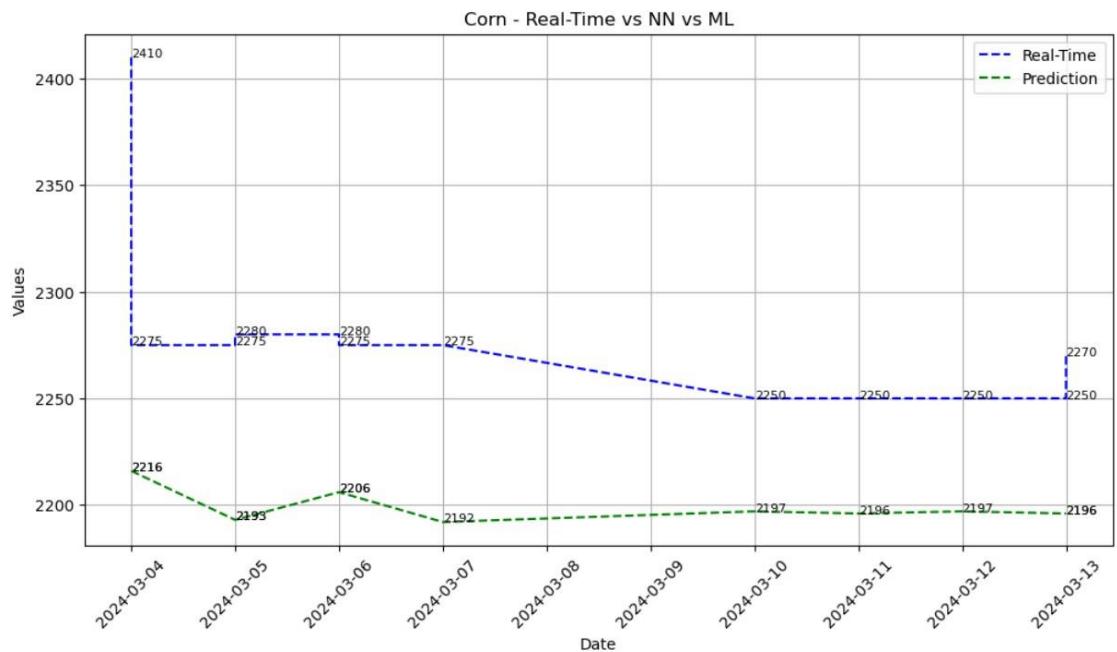
## Key Findings with Output:

### Corn:

- Average Real-Time Price: 2278.33
- Average Predicted Price: 2200.842
- Average Deviation: 77.49152
- Average Accuracy: 96.59876%

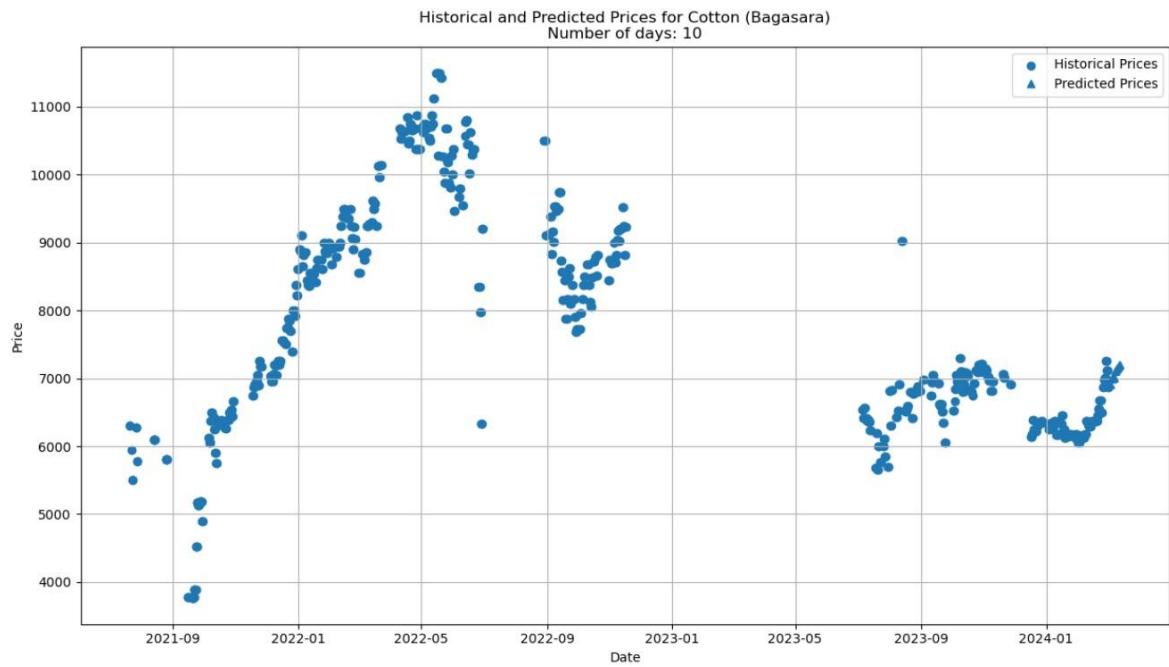


## Crop-Wise Trained Neural Networks



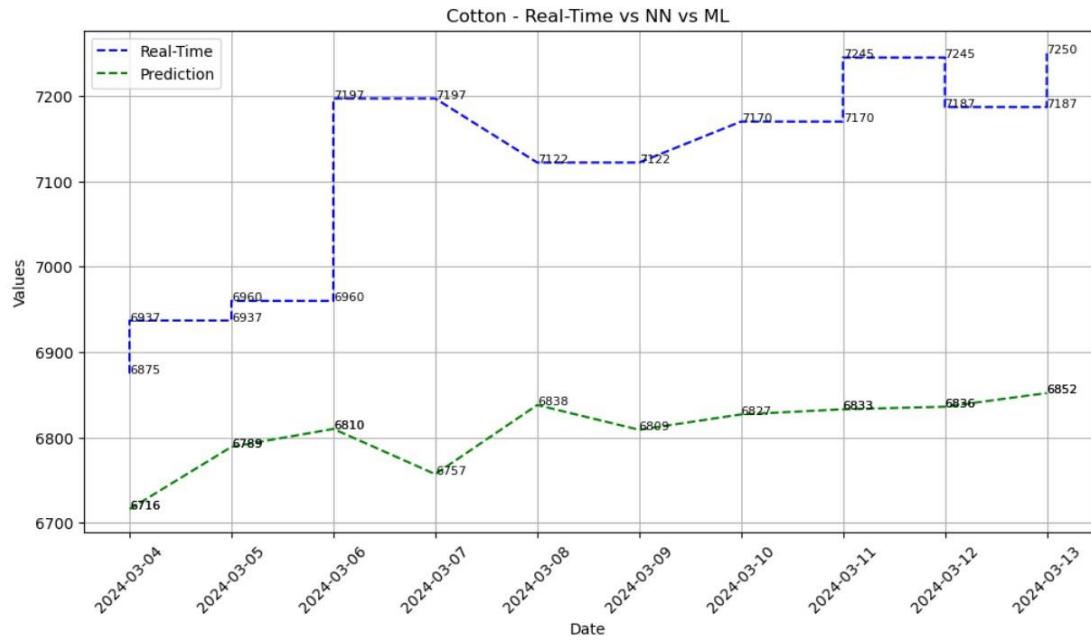
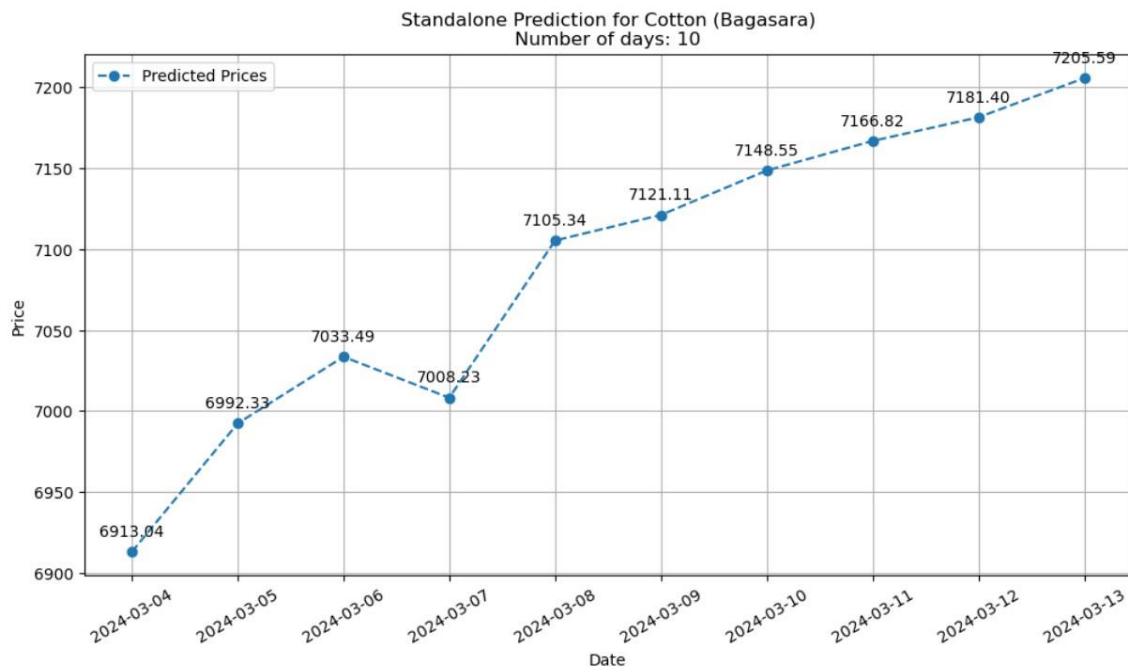
### Cotton:

- Average Real-Time Price: 7110.06
- Average Predicted Price: 6806.817
- Average Deviation: 303.2457
- Average Accuracy: 95.73498%



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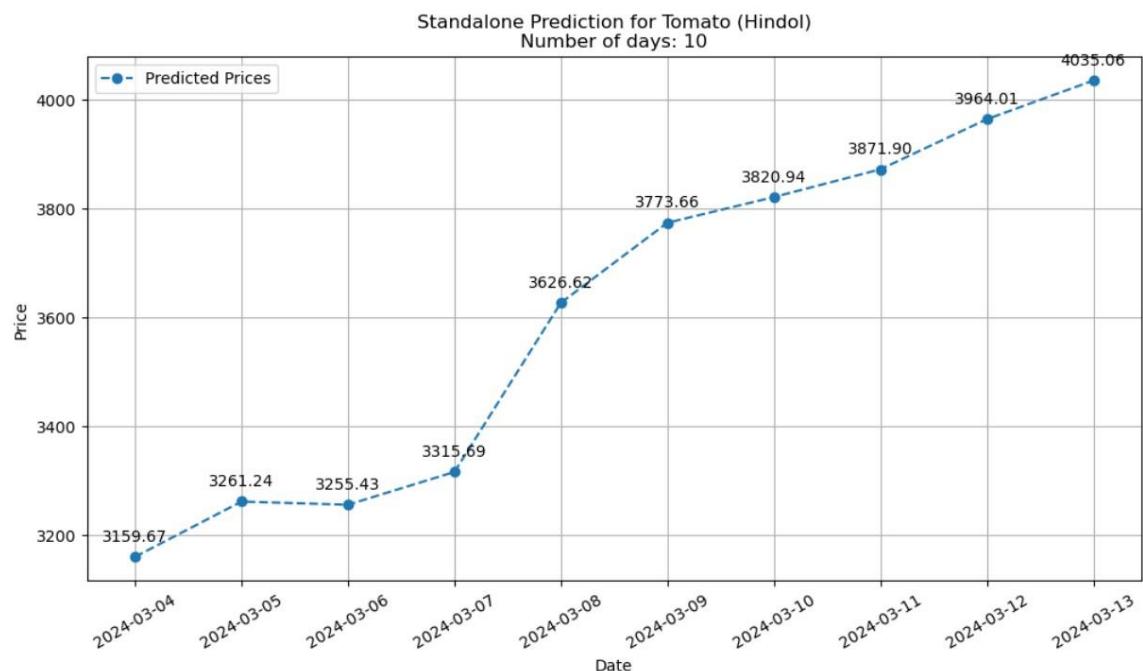
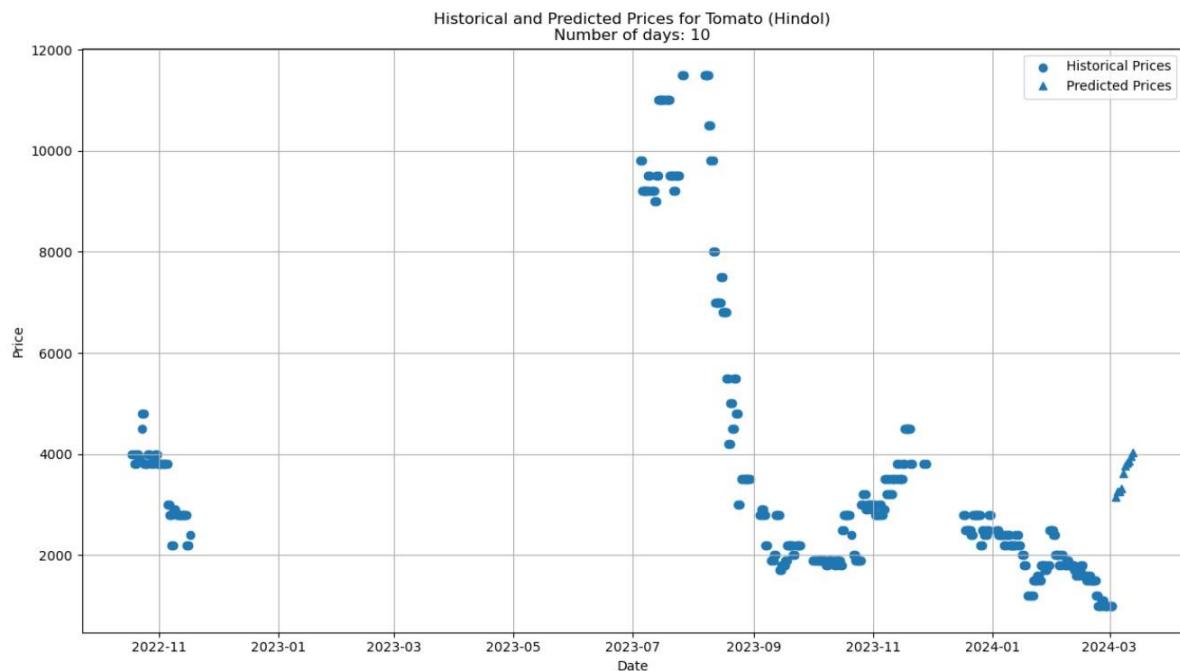
## Crop-Wise Trained Neural Networks



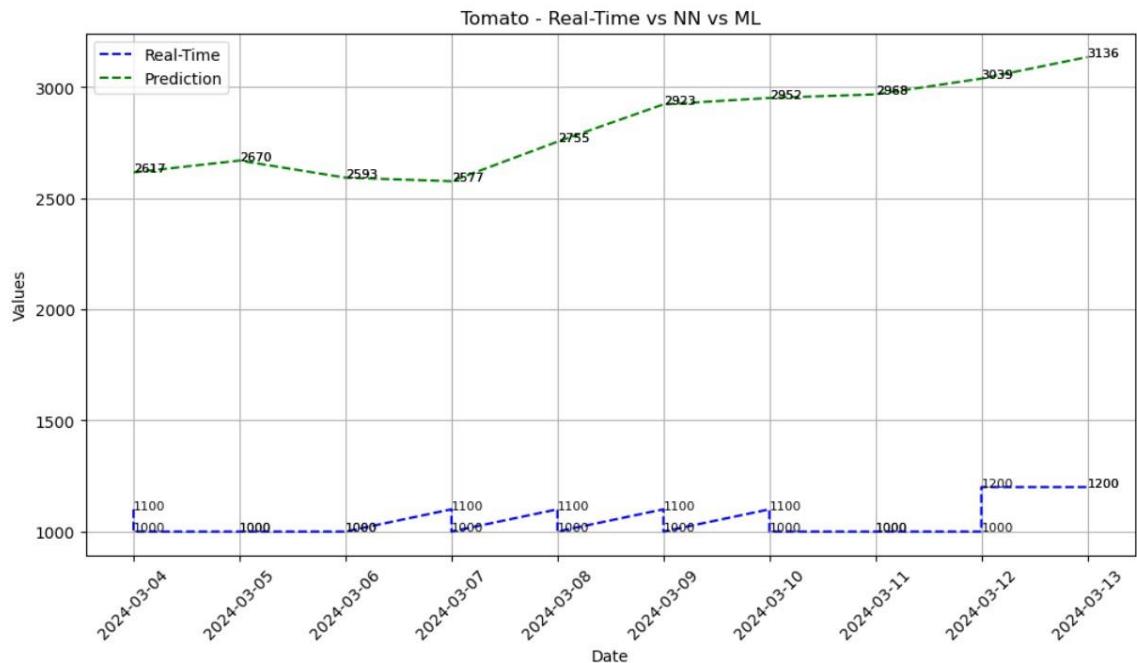
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### **Tomato:**

- Average Real-Time Price: 1055.00
- Average Predicted Price: 2823.546
- Average Deviation: 1768.546
- Average Accuracy: -67.6347% (Negative indicates poor model performance)

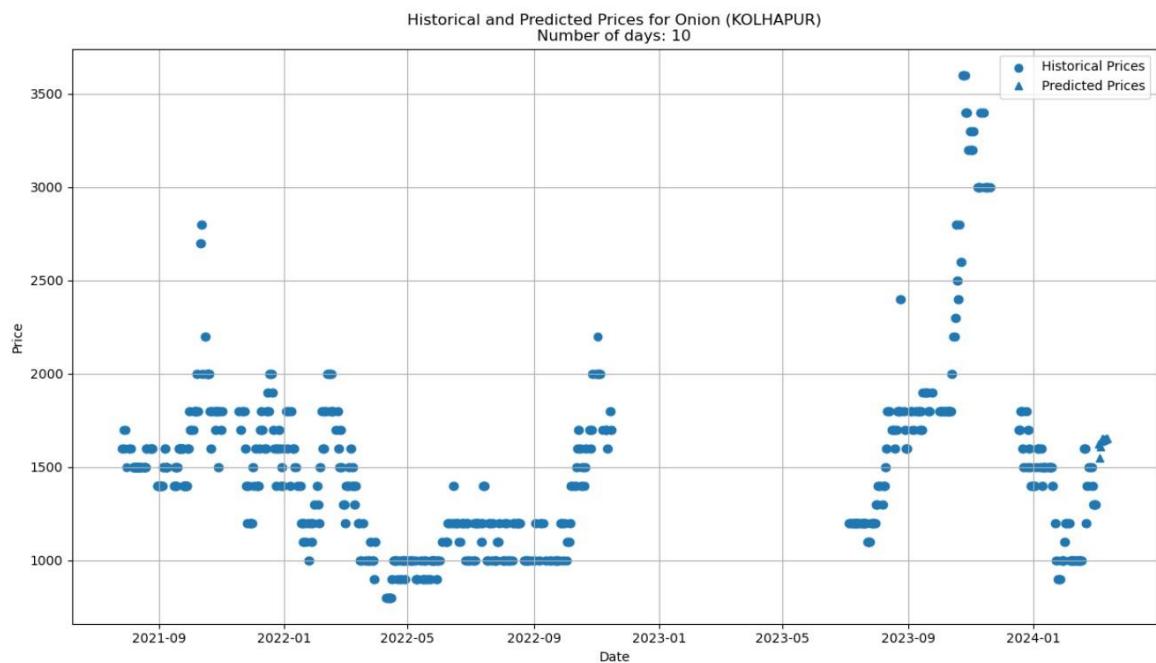


## Crop-Wise Trained Neural Networks



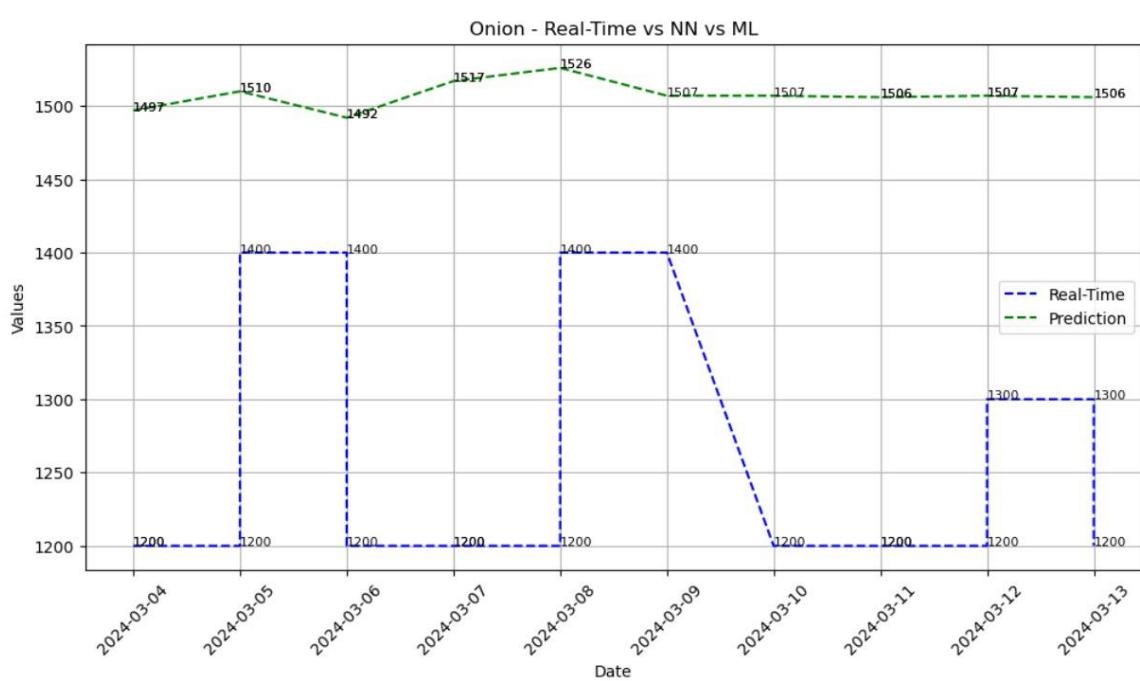
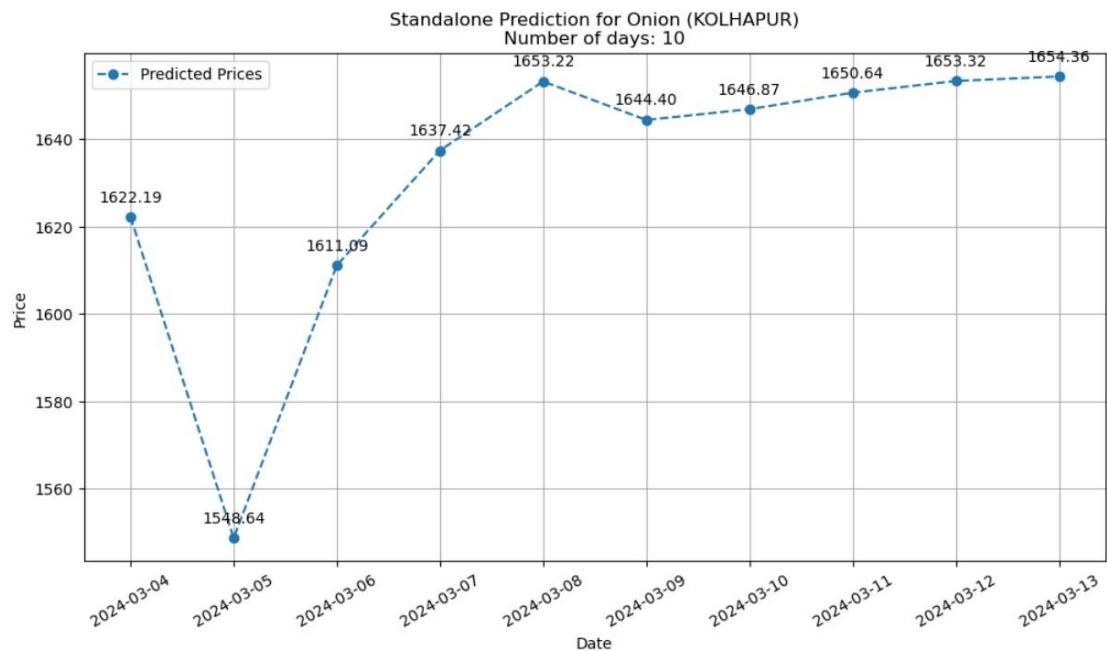
### Onion:

- Average Real-Time Price: 1255.56
- Average Predicted Price: 1507.989
- Average Deviation: 252.4337
- Average Accuracy: 79.89466%



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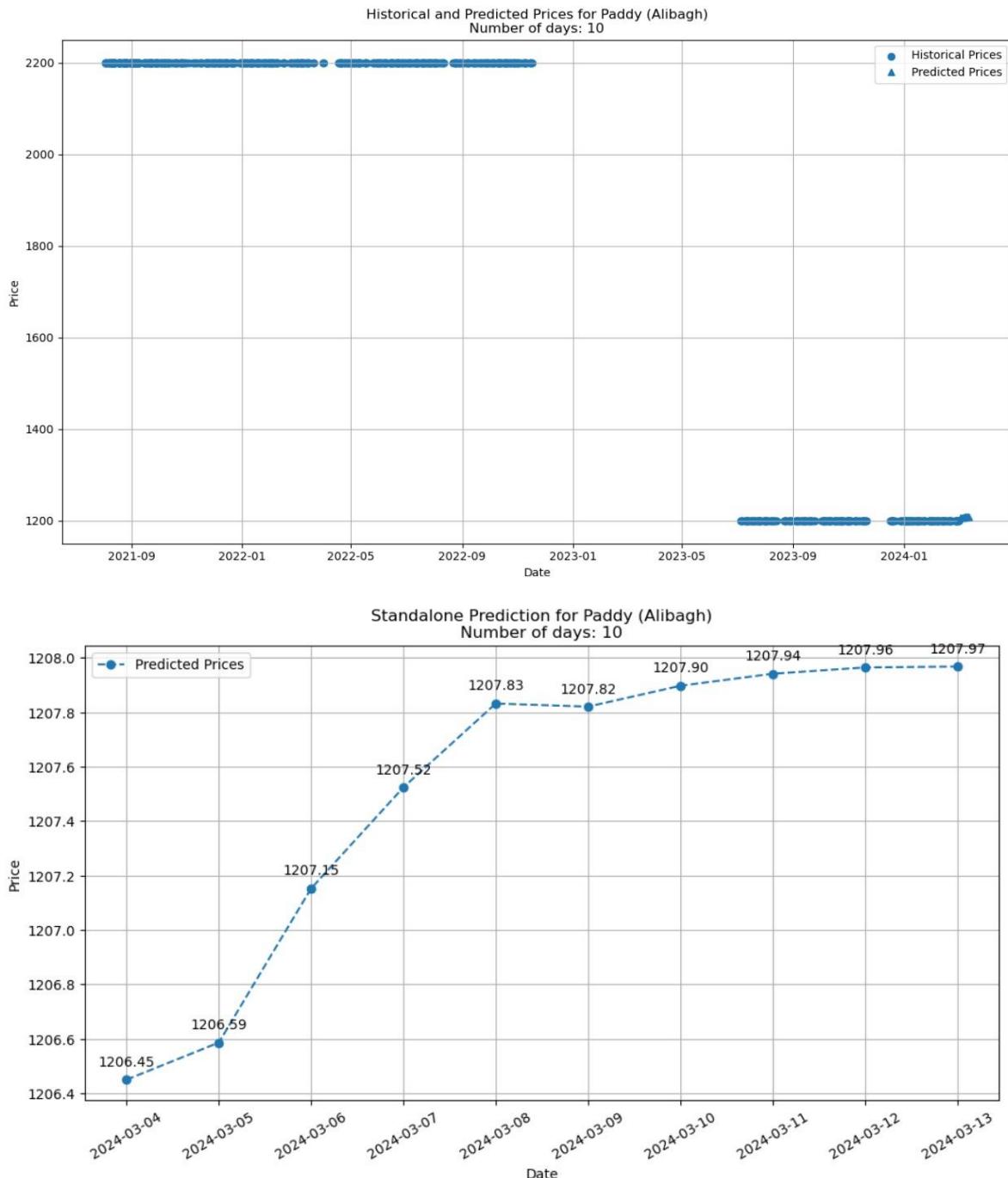
## Crop-Wise Trained Neural Networks



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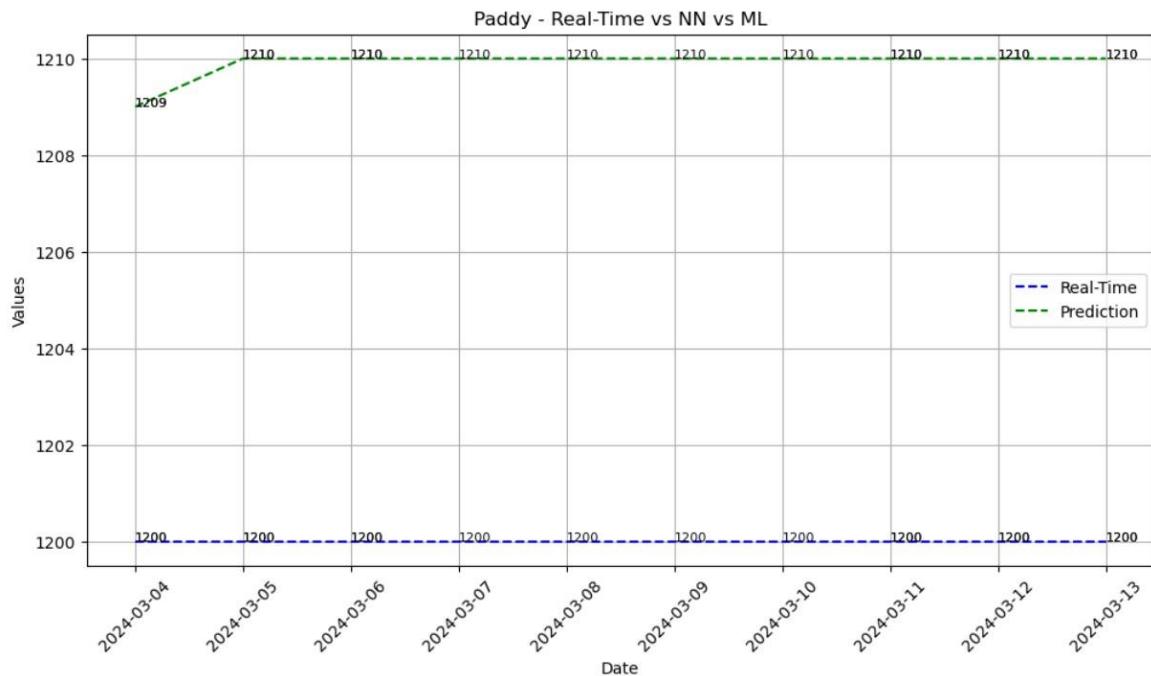
### Paddy:

- Average Real-Time Price: 1200.00
- Average Predicted Price: 1210.555
- Average Deviation: 10.55453
- Average Accuracy: 99.12046%



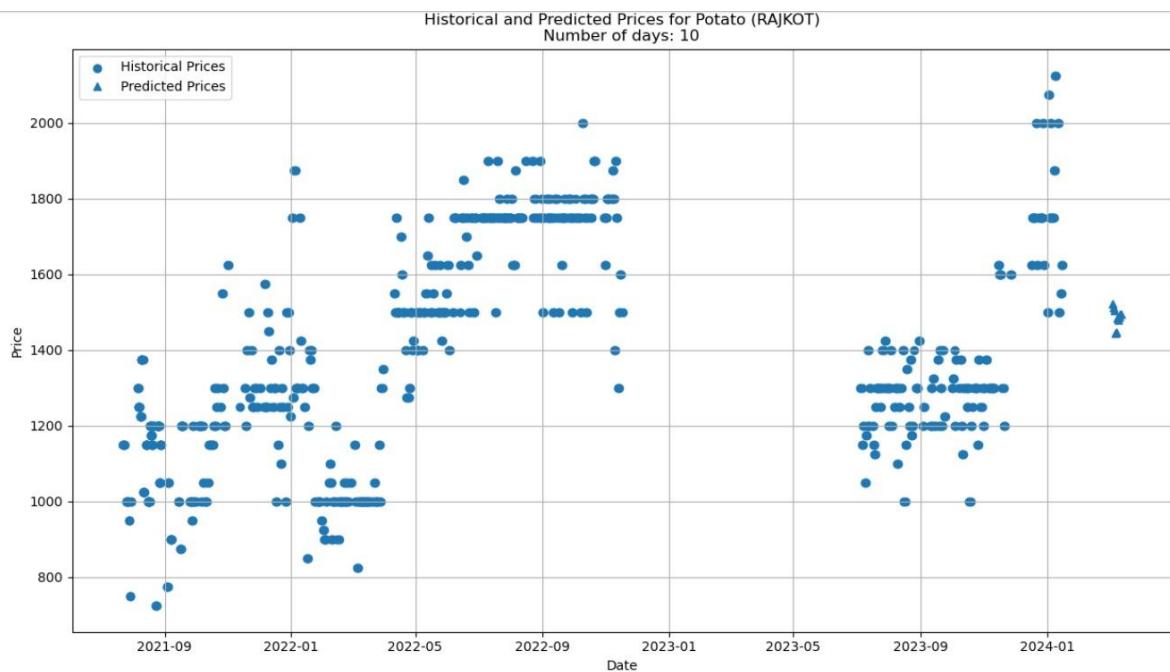
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## Crop-Wise Trained Neural Networks



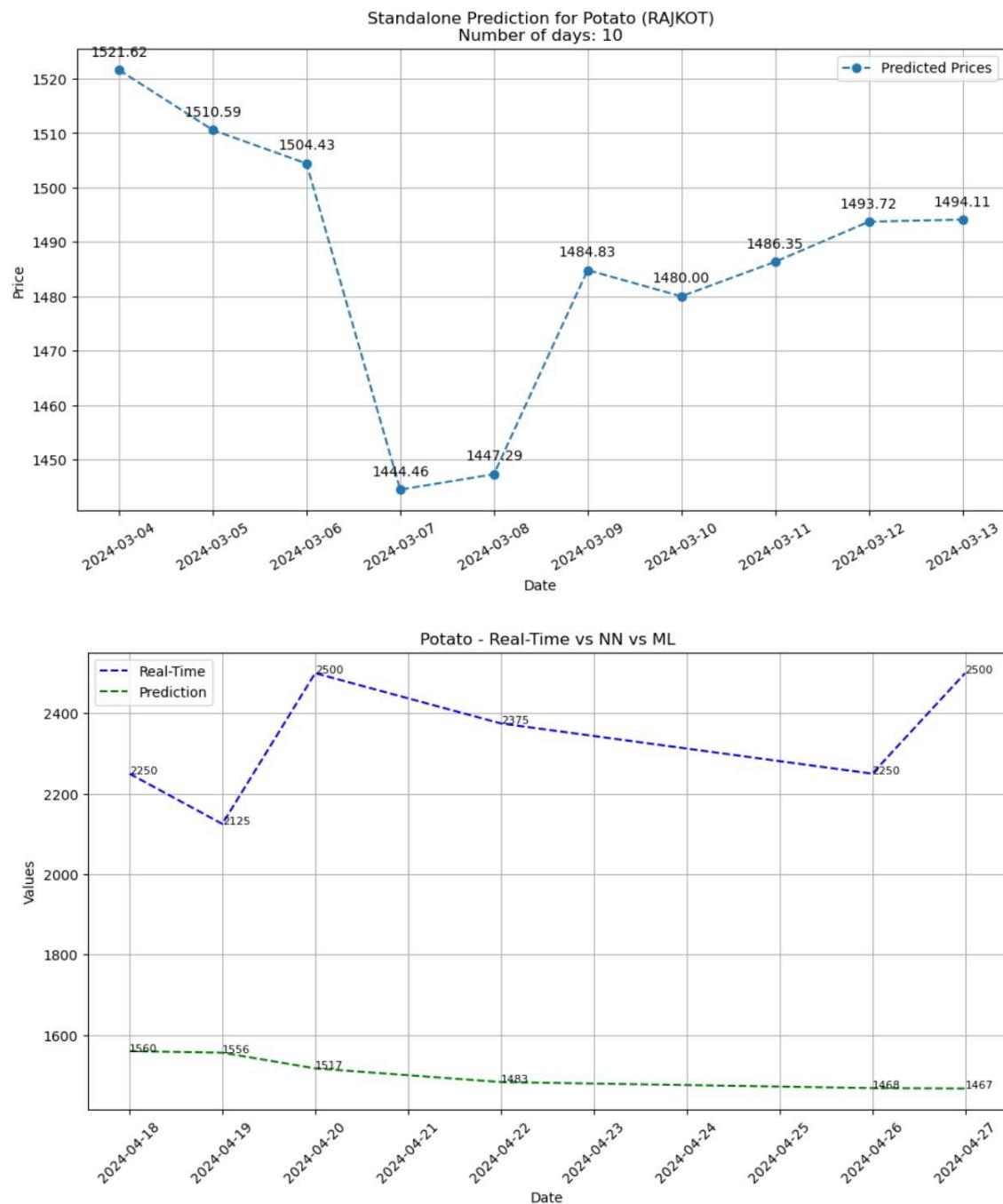
### Potato:

- Average Real-Time Price: 2333.33
- Average Predicted Price: 1508.97
- Average Deviation: 824.363
- Average Accuracy: 64.67016%



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## Crop-Wise Trained Neural Networks



### Conclusion:

The model demonstrates high accuracy in predicting prices for crops like corn (96.22%), cotton (96.07%), and paddy (95.19%). However, it performs poorly for tomatoes, showing negative accuracy, indicating significant deviations from actual prices. For onions and potatoes, the accuracy is moderate, suggesting room for improvement in prediction accuracy.

This analysis highlights the strengths and weaknesses of the current model in predicting crop prices, providing a foundation for further model refinement and optimization. Future work may focus on enhancing the model's accuracy for crops with lower performance and exploring additional features to improve predictive capability.

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