```
Classes: ['acai', 'pupunha', 'cupuacu', 'tucuma', 'guarana', 'graviola']
```


```
Found 72 images belonging to 6 classes.
```

```
/usr/local/lib/python3.11/dist-packages/keras/src/trainers/data_adapters/py_dataset_adapter.py:121: UserWarning: Your `PyDataset` class should call `super().__init__(**kwargs)` in its
  self._warn_if_super_not_called()
Epoch 1/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 7s/step - accuracy: 0.1324 - loss: 4.1515
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the nat
3/3 ━━━━━━━━━━━━━━━━━━━━ 23s 8s/step - accuracy: 0.1549 - loss: 4.0361 - val_accuracy: 0.2778 - val_loss: 2.9270 - learning_rate: 0.0010
Epoch 2/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 6s/step - accuracy: 0.3944 - loss: 2.7233
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the nat
3/3 ━━━━━━━━━━━━━━━━━━━━ 20s 8s/step - accuracy: 0.4104 - loss: 2.7072 - val_accuracy: 0.3333 - val_loss: 2.9193 - learning_rate: 0.0010
Epoch 3/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 16s 7s/step - accuracy: 0.5132 - loss: 2.6731 - val_accuracy: 0.2222 - val_loss: 3.2767 - learning_rate: 0.0010
Epoch 4/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 16s 5s/step - accuracy: 0.4931 - loss: 2.6378 - val_accuracy: 0.2778 - val_loss: 4.7318 - learning_rate: 0.0010
Epoch 5/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 16s 7s/step - accuracy: 0.5465 - loss: 2.7442 - val_accuracy: 0.1667 - val_loss: 7.1288 - learning_rate: 0.0010
Epoch 6/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 16s 5s/step - accuracy: 0.5993 - loss: 2.6190 - val_accuracy: 0.1667 - val_loss: 9.5762 - learning_rate: 5.0000e-04
Epoch 7/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 16s 4s/step - accuracy: 0.5451 - loss: 2.5632 - val_accuracy: 0.1667 - val_loss: 11.0435 - learning_rate: 5.0000e-04
```

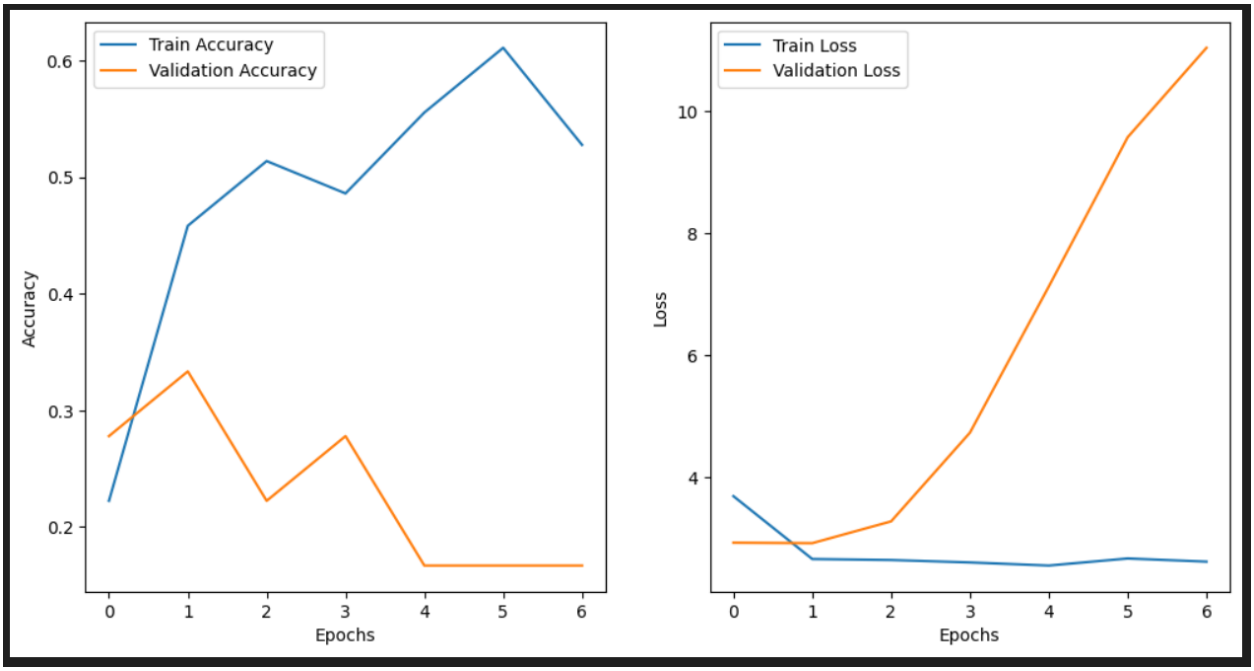
```
Found 30 images belonging to 6 classes.
1/1 ━━━━━━━━━━━━━━━━━━━━ 2s 2s/step - accuracy: 0.3333 - loss: 2.8726
Test Accuracy: 33.33%
```

```
1/1 ━━━━━━━━━━━━━━━━━━━━ 1s 1s/step
              precision    recall  f1-score   support

        acai       0.00      0.00      0.00         5
     pupunha       0.25      1.00      0.40         5
     cupuacu       0.00      0.00      0.00         5
      tucuma       0.00      0.00      0.00         5
     guarana       0.62      1.00      0.77         5
    graviola       0.00      0.00      0.00         5

    accuracy                           0.33        30
   macro avg       0.15      0.33      0.19        30
weighted avg       0.15      0.33      0.19        30

/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
```



```
Epoch 1/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 648ms/step - accuracy: 0.2657 - loss: 2.3201
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.sav
3/3 ━━━━━━━━━━━━━━━━━━━━ 12s 2s/step - accuracy: 0.2549 - loss: 2.3198 - val_accuracy: 0.2222 - val_loss: 1.9954 - learning_rate: 0.0010
Epoch 2/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 666ms/step - accuracy: 0.4155 - loss: 1.6917
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.sav
3/3 ━━━━━━━━━━━━━━━━━━━━ 6s 2s/step - accuracy: 0.4123 - loss: 1.7130 - val_accuracy: 0.4444 - val_loss: 1.4282 - learning_rate: 0.0010
Epoch 3/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 378ms/step - accuracy: 0.3944 - loss: 1.4936
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.sav
3/3 ━━━━━━━━━━━━━━━━━━━━ 3s 686ms/step - accuracy: 0.4104 - loss: 1.4563 - val_accuracy: 0.5556 - val_loss: 1.2327 - learning_rate: 0.0010
Epoch 4/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 2s 408ms/step - accuracy: 0.5286 - loss: 0.9507 - val_accuracy: 0.5000 - val_loss: 1.1580 - learning_rate: 0.0010
Epoch 5/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 568ms/step - accuracy: 0.7241 - loss: 0.7472
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.sav
3/3 ━━━━━━━━━━━━━━━━━━━━ 2s 841ms/step - accuracy: 0.7236 - loss: 0.7553 - val_accuracy: 0.7222 - val_loss: 0.9767 - learning_rate: 0.0010
Epoch 6/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 2s 770ms/step - accuracy: 0.8531 - loss: 0.5173 - val_accuracy: 0.7222 - val_loss: 0.8294 - learning_rate: 0.0010
Epoch 7/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 3s 898ms/step - accuracy: 0.8345 - loss: 0.5103 - val_accuracy: 0.7222 - val_loss: 0.6791 - learning_rate: 0.0010
Epoch 8/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 761ms/step - accuracy: 0.8657 - loss: 0.4015
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.sav
3/3 ━━━━━━━━━━━━━━━━━━━━ 4s 1s/step - accuracy: 0.8611 - loss: 0.3997 - val_accuracy: 0.8333 - val_loss: 0.5864 - learning_rate: 0.0010
Epoch 9/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 2s 717ms/step - accuracy: 0.8111 - loss: 0.4936 - val_accuracy: 0.7778 - val_loss: 0.5607 - learning_rate: 0.0010
Epoch 10/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 2s 1s/step - accuracy: 0.9458 - loss: 0.2534 - val_accuracy: 0.7778 - val_loss: 0.5827 - learning_rate: 0.0010
Epoch 11/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 3s 937ms/step - accuracy: 0.9247 - loss: 0.2861 - val_accuracy: 0.8333 - val_loss: 0.6355 - learning_rate: 0.0010
Epoch 12/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 2s 733ms/step - accuracy: 0.9333 - loss: 0.2065 - val_accuracy: 0.8333 - val_loss: 0.6742 - learning_rate: 0.0010
Epoch 13/30
3/3 ━━━━━━━━━━━━━━━━━━━━ 2s 846ms/step - accuracy: 0.9582 - loss: 0.1814 - val_accuracy: 0.8333 - val_loss: 0.6596 - learning_rate: 5.0000e-04
Epoch 14/30
```

```
1/1 ━━━━━━━━━━━━━━━━━━━━ 2s 2s/step
Inference Output: First 20 Samples:
1. True: acai - Predicted: acai
2. True: acai - Predicted: acai
3. True: acai - Predicted: acai
4. True: acai - Predicted: acai
5. True: acai - Predicted: acai
6. True: pupunha - Predicted: pupunha
7. True: pupunha - Predicted: pupunha
8. True: pupunha - Predicted: pupunha
9. True: pupunha - Predicted: pupunha
10. True: pupunha - Predicted: pupunha
11. True: cupuacu - Predicted: cupuacu
12. True: cupuacu - Predicted: cupuacu
13. True: cupuacu - Predicted: cupuacu
14. True: cupuacu - Predicted: cupuacu
15. True: cupuacu - Predicted: cupuacu
16. True: tucuma - Predicted: tucuma
17. True: tucuma - Predicted: tucuma
18. True: tucuma - Predicted: tucuma
19. True: tucuma - Predicted: tucuma
20. True: tucuma - Predicted: tucuma
```

Classification Report:

	precision	recall	f1-score	support
acai	1.00	1.00	1.00	5
pupunha	1.00	1.00	1.00	5
cupuacu	1.00	1.00	1.00	5
tucuma	0.83	1.00	0.91	5
guarana	1.00	1.00	1.00	5
graviola	1.00	0.80	0.89	5
accuracy			0.97	30
macro avg	0.97	0.97	0.97	30
weighted avg	0.97	0.97	0.97	30