

# *Agricultural Raw Material Analysis (ML - Classification & regression)*

```
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier, RandomForestRegressor
from sklearn.metrics import accuracy_score, mean_squared_error
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[3]
# Sample data (replace with your dataset)
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[4]
# X contains features, y_class contains labels for classification, y_reg contains target values for regression
X = np.random.rand(100, 5) # Example features
y_class = np.random.randint(0, 3, size=100) # Example labels for classification
y_reg = np.random.rand(100) # Example target values for regression
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[5]
# Split data into training and testing sets
X_train, X_test, y_class_train, y_class_test = train_test_split(X, y_class, test_size=0.2, random_state=42)
X_train, X_test, y_reg_train, y_reg_test = train_test_split(X, y_reg, test_size=0.2, random_state=42)
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[6]
# Classification model
clf = RandomForestClassifier()
clf.fit(X_train, y_class_train)
rrrry_class_pred = clf.predict(X_test)
accuracy = accuracy_score(y_class_test, y_class_pred)
print("Classification Accuracy:", accuracy)
output
Classification Accuracy: 0.45
```

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[7]
# Regression model
reg = RandomForestRegressor()
reg.fit(X_train, y_reg_train)
y_reg_pred = reg.predict(X_test)
mse = mean_squared_error(y_reg_test, y_reg_pred)
print("Mean Squared Error (Regression):", mse)
output
Mean Squared Error (Regression): 0.07930491610659005
```

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