

Model Report: XGBoost Field-Level

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Script: /home/mmann1123/Documents/github/South\_Africa\_Crop\_Comp/deep\_learn/src/Classical Machine Learning/Fi

Data Split:

train\_count: 2653  
val\_count: 664  
test\_count: 830  
random\_seed: 42  
split\_method: fid-wise

Metrics (test set):

Accuracy: 0.7458  
Cohen Kappa: 0.6439  
F1 Weighted: 0.7364  
F1 Macro: 0.6771

Hyperparameters:

n\_estimators: 1270  
max\_depth: 5  
learning\_rate: 0.012590803411298533  
subsample: 0.7119692232592737  
colsample\_bytree: 0.5164695949521513  
gamma: 0.3986968344122853  
reg\_alpha: 0.012399826939390844  
reg\_lambda: 0.5898882824824992  
min\_child\_weight: 8

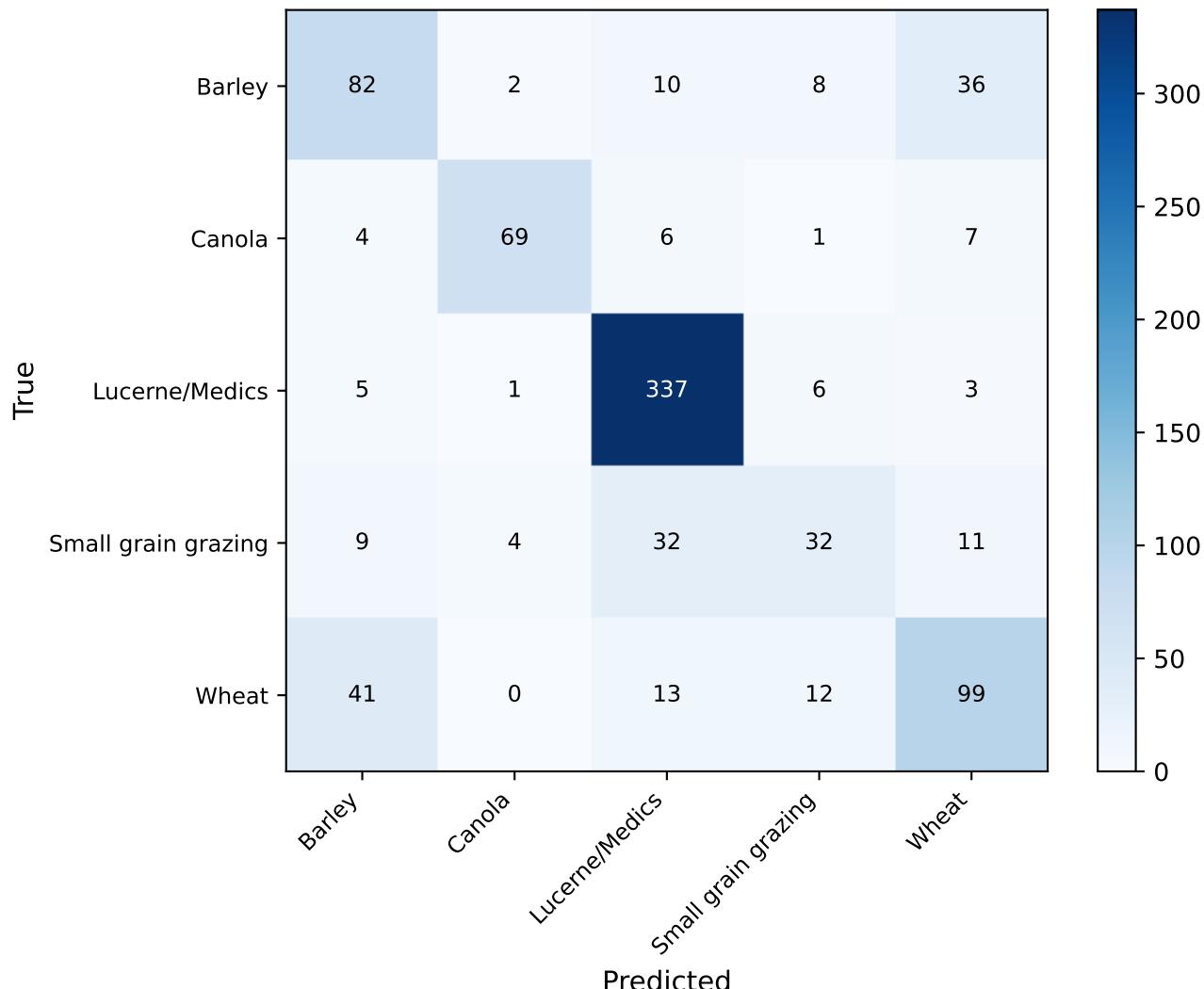
Notes:

Optuna tuning: 57 trials, best F1=0.7628

## Per-Class Metrics

Class	Precision	Recall	F1-Score	Support
Barley	0.582	0.594	0.588	138
Canola	0.908	0.793	0.847	87
Lucerne/Medics	0.847	0.957	0.899	352
Small grain grazing	0.542	0.364	0.435	88
Wheat	0.635	0.600	0.617	165

# Confusion Matrix



## Top 20 Feature Importances

