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Model Report: XGBoost (Pixel-Level)
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Generated: 2026-02-09 10:06:11
Script: /home/mmann1123/Documents/github/South_Africa_Crop_Comp/deep_learn/src/Classical Machine Learning/pi

Data Split:
  train_count: 6058481
  test_count: 1484625
  random_seed: 42
  split_method: fid-wise

Metrics (test set):
  Accuracy:      0.6903
  Cohen Kappa:  0.5881
  F1 Weighted:  0.6802
  F1 Macro:      0.6383

Hyperparameters:
  objective: multi:softprob
  base_score: None
  booster: None
  callbacks: None
  colsample_bylevel: None
  colsample_bynode: None
  colsample_bytree: None
  device: cuda
  early_stopping_rounds: None
  enable_categorical: False
  eval_metric: logloss
  feature_types: None
  gamma: None
  grow_policy: None
  importance_type: None
  interaction_constraints: None
  learning_rate: None
  max_bin: None
  max_cat_threshold: None
  max_cat_to_onehot: None
  max_delta_step: None
  max_depth: None
  max_leaves: None
  min_child_weight: None
  missing: nan
  monotone_constraints: None
  multi_strategy: None
  n_estimators: None
  n_jobs: None
  num_parallel_tree: None
  random_state: None
  reg_alpha: None
  reg_lambda: None
  sampling_method: None
  scale_pos_weight: None
  subsample: None
  tree_method: hist
  validate_parameters: None
  verbosity: None
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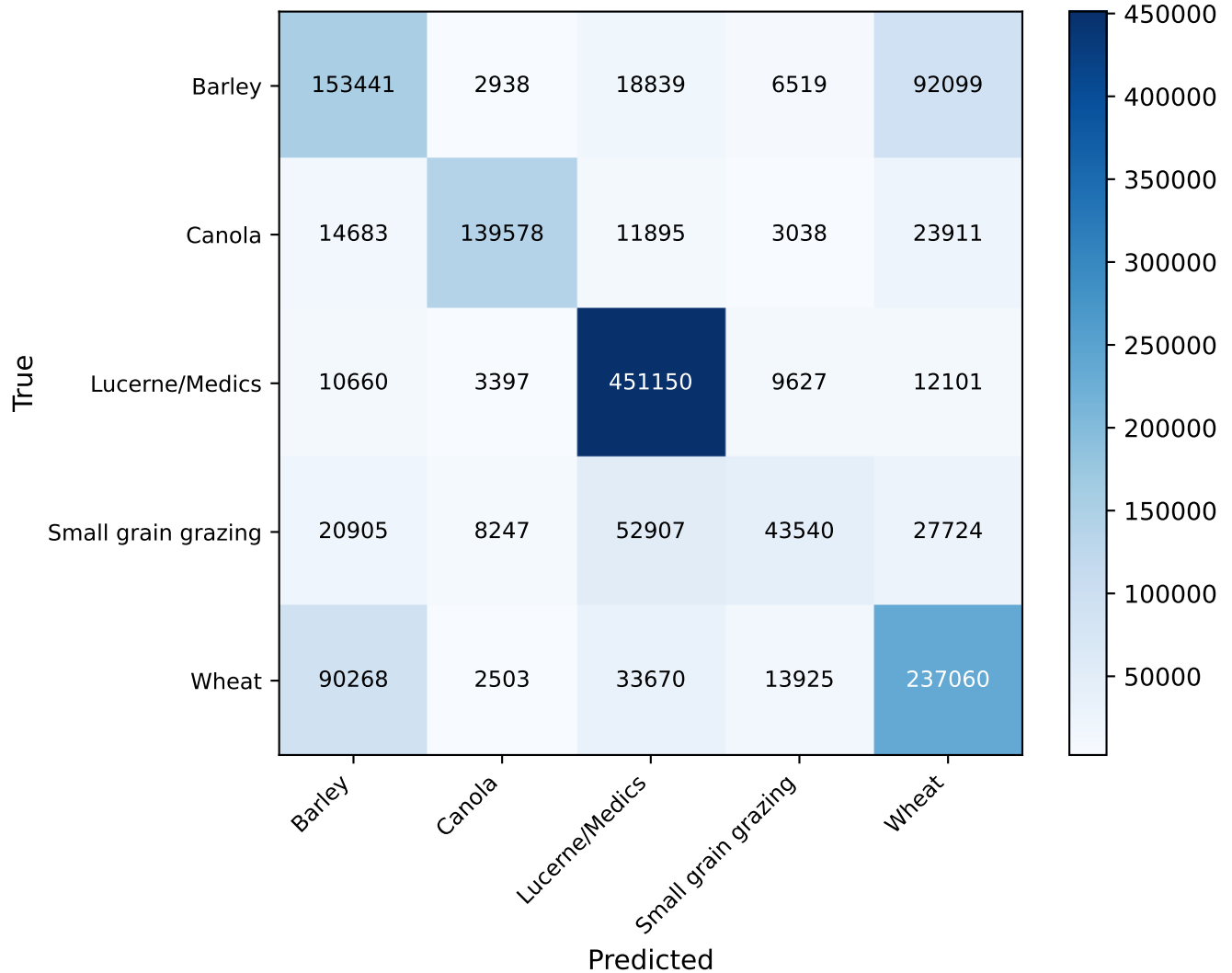
Per-Class Metrics

Class	Precision	Recall	F1-Score	Support
Barley	0.529	0.560	0.544	273836
Canola	0.891	0.723	0.798	193105
Lucerne/Medics	0.794	0.927	0.855	486935
Small grain grazing	0.568	0.284	0.379	153323
Wheat	0.603	0.628	0.615	377426

Confusion Matrix

	Barley	Canola	Lucerne/Medics	Small grain grazing	Wheat
Barley	153441	2938	18839	6519	92099
Canola	14683	139578	11895	3038	23911
Lucerne/Medics	10660	3397	451150	9627	12101
Small grain grazing	20905	8247	52907	43540	27724
Wheat	90268	2503	33670	13925	237060

Top 20 Feature Importances