**Table S2.** Best performance machine learning models per genotype and their most predictive features.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Genotype** | **Model** | **Accuracy** | **AUC** | **Predictive Features** |
| *RYR1* | dt | 1.00 | 1.00 | pH45m, cooking loss, marbling |
| lr | 1.00 | 1.00 | pH45m, pH24h, WBSF |
| *PRKGA3/RN* | catboost | 0.87 | 1.00 | pH24h, marbling, thawing loss |
| dt | 0.87 | 0.92 | pH24h, L\*, cooking loss |
| *CASTG872A* | catboost | 0.86 | 0.93 | cooking loss, thawing loss, pH45m |
| et | 0.90 | 0.90 | cooking loss, thawing loss, L\* |
| *CASTS638A* | rf | 0.87 | 0.87 | cooking loss, pH24h, WBSF |
| et | 0.75 | 1.00 | pH24h, cooking loss, marbling |
| *SOX6A* | catboost | 0.63 | 0.75 | b\*, drip loss 24h, pH45m |
| rf | 0.63 | 0.76 | b\*, drip loss24h, pH45m |
| *SOX6B* | catboost | 0.86 | 0.83 | L\*, thawing loss, pH45m |
| lr | 0.86 | 0.84 | Marbling, pH45m, b\* |

Machine learning classification models selected for each candidate gene based on their performance. dt: Decision Tree Classifier; lr: Logistic Regression; catboost: CatBoost Classifier; et: Extra Trees Classifier; rf: Random Forest Classifier; AUC: area under the curve.