

Supplemental Materials to

Detecting and predicting changes in milk homogeneity using data from automatic milking systems. *Journal of Dairy Science.* 2021.

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Supplementary materials published by the Swedish University of Agricultural Sciences, Department of Clinical Sciences, 2021

Supplementary Table 1. The ten runs of the cow milking relative score detection model (CMRS.D)

Run number	Validation loss	Accuracy	Sensitivity	Specificity	Positive predictive value	Negative predictive value
1	0.2596268	0.9267081	0.28571	0.97463	0.45714	0.94805
2	0.2838112	0.9149068	0.28571	0.96195	0.35955	0.9474
3	0.2525614	0.9322981	0.1875	0.98798	0.53846	0.94208
4	0.2607079	0.9273292	0.20536	0.98131	0.45098	0.94291
5	0.25325	0.9354037	0.19643	0.99065	0.61111	0.94282
6	0.2881456	0.9136646	0.34821	0.95594	0.37143	0.9515
7	0.2573081	0.9322981	0.25893	0.98264	0.52727	0.94662
8	0.2558686	0.9279503	0.28571	0.97597	0.47059	0.94812
9	0.2524667	0.9310559	0.25893	0.98131	0.50877	0.94656
10	0.2582466	0.9335404	0.17857	0.98999	0.57143	0.94159
<i>median</i>	<i>0.25778</i>	<i>0.92950</i>	<i>0.25893</i>	<i>0.98131</i>	<i>0.48968</i>	<i>0.94659</i>

Supplementary Table 2. The ten runs of the cow milking relative score prediction model (CMRS.P)

Run number	Validation loss	Accuracy	Sensitivity	Specificity	Positive predictive value	Negative predictive value
1	0.237406	0.935404	0.21429	0.98932	0.6	0.94395
2	0.24881	0.928571	0.25	0.97931	0.47458	0.94584
3	0.272149	0.922981	0.29464	0.96996	0.42308	0.94843
4	0.245252	0.937888	0.16964	0.99533	0.73077	0.94129
5	0.243301	0.938509	0.19643	0.99399	0.70968	0.943
6	0.247216	0.929193	0.28571	0.9773	0.48485	0.94819
7	0.247288	0.932919	0.23214	0.98531	0.54167	0.94494
8	0.254361	0.926087	0.25	0.97664	0.44444	0.9457
9	0.258651	0.931677	0.25893	0.98198	0.51786	0.94659
10	0.258895	0.930435	0.26786	0.97997	0.5	0.9471
<i>median</i>	<i>0.24805</i>	<i>0.93106</i>	<i>0.25000</i>	<i>0.98098</i>	<i>0.50893</i>	<i>0.94577</i>

Supplementary Table S3. The ten runs of the cow period class with cutoff at 0.2 (CPC.3)

Run number	Validation loss	Accuracy	Sensitivity	Specificity	Positive predictive value	Negative predictive value
1	0.4697476	0.8436214	0.175	0.97537	0.58333	0.85714
2	0.4526056	0.8518519	0.175	0.98522	0.700	0.85837
3	0.4604417	0.8600823	0.2375	0.98276	0.73077	0.86739
4	0.4813022	0.8518519	0.275	0.96552	0.61111	0.87111
5	0.4611412	0.8477366	0.2625	0.96305	0.58333	0.86889
6	0.4534932	0.8580247	0.225	0.98276	0.720	0.86551
7	0.4900543	0.8251029	0.2	0.94828	0.43243	0.85746
8	0.4980114	0.845679	0.15	0.98276	0.63158	0.85439
9	0.4409778	0.8559671	0.3	0.96552	0.63158	0.875
10	0.4607101	0.8312757	0.3375	0.92857	0.48214	0.87674
median	0.46093	0.84979	0.23125	0.97045	0.62135	0.86645

Supplementary Table S4. The ten runs of the cow period class with cutoff at 0.4 (CPC.4)

Run number	Validation loss	Accuracy	Sensitivity	Specificity	Positive predictive value	Negative predictive value
1	0.2371007	0.9300412	0.14286	0.99113	0.55556	0.93711
2	0.2368824	0.9341564	0.14286	0.99557	0.71429	0.93737
3	0.2363323	0.9300412	0.085714	0.995565	0.600	0.933472
4	0.2401764	0.9341564	0.14286	0.99557	0.71429	0.93737
5	0.2343871	0.9320988	0.14286	0.99335	0.625	0.93724
6	0.2430616	0.936214	0.2	0.99335	0.700	0.94118
7	0.2366198	0.9320988	0.11429	0.99557	0.66667	0.93542
8	0.2406861	0.9279835	0.085714	0.993348	0.500	0.933333
9	0.256388	0.9218107	0.17143	0.98004	0.400	0.93843
10	0.242198	0.9320988	0.11429	0.99557	0.66667	0.93542
median	0.23864	0.93210	0.14286	0.99446	0.64584	0.93718