Table 1: Average Accuracy across Food color and Pesticide Test Sets in Various settings

Test Accuracy Results on Separate TestSet

Input Features: Individual Mean of Each Color Channels (3 Means)												
	Food Dye						**Pesticide**					
	(Without Ref Region)			***(With Ref Region)***			***(Without Ref Region)***			***(With Ref Region)***		
	RGB	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**
LR	0.471	0.501	0.458	0.637	0.668	0.633	0.217	0.203	0.231	0.267	0.271	0.276
SVM	0.491	0.498	0.490	0.653	0.670	0.653	0.221	0.212	0.219	0.273	0.294	0.276
RF	0.401	0.458	0.431	0.471	0.578	0.573	0.186	0.198	0.206	0.248	0.243	0.256
ANN	0.526	0.435	0.416	0.603	0.573	0.553	0.209	0.246	0.196	0.299	0.344	0.284
	Input Features: All color pixels from 3-channels of Downsampled 16*16 Image						**Input Feature: Mean of a Single Channel (Channel with highest correlation)**					
	Food Dye (With Ref)			**Pesticide (With Ref)**			**Food Dye (With Ref)**			**Pesticide (With Ref)**		
	RGB	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**	**B(RGB)**	**S(HSV)**	**B(LAB)**	**B(RGB)**	**S(HSV)**	**B(LAB)**
LR	0.603	0.505	0.630	0.269	0.282	0.272	0.310	0.4516	0.3866	0.306	0.314	0.267
SVM	0.685	0.550	0.696	0.287	0.287	0.307	0.300	0.445	0.431	0.296	0.311	0.256
RF	0.546	0.576	0.593	0.299	0.289	0.286	0.301	0.455	0.3633	0.239	0.297	0.183
ANN	0.765	0.406	0.678	0.267	0.341	0.304	0.315	0.485	0.448	0.298	0.301	0.214

Test Accuracy Results on Separate TestSet after Reducing Concentration Labels

	Input Features: All color pixels from 3-channels of Downsampled 16*16 Image						**Input Feature: Individual Mean of Each Color Channels (3 Means)**					
	Food Dye (With Ref)			**Pesticide (With Ref)**			**Food Dye (With Ref)**			**Pesticide (With Ref)**		
	RGB	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**
LR	0.940	0.921	0.946	0.753	0.637	0.743	0.933	0.936	0.928	0.900	0.873	0.895
SVM	0.936	0.926	0.938	0.738	0.674	0.774	0.936	0.941	0.936	0.903	0.883	0.908
RF	0.901	0.933	0.940	0.865	0.875	0.870	0.898	0.915	0.928	0.837	0.855	0.852
ANN	0.960	0.946	0.966	0.851	0.8336	0.778	0.893	0.868	0.926	0.866	0.868	0.901

Table 2: Cross Validation Accuracy (in mean and standard deviation)across Food color and Pesticide in Various settings

Cross-Validation Accuracy Results $(mean \pm std)$

Input Features: Individual Mean of Each Color Channels (3 Means)

	Food Dye (Without Ref Region)			*Food Dye (With Ref Region)*		
	RGB	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**
LR	0.470 ± 0.018	0.431 ± 0.021	0.455 ± 0.0268	0.684 ± 0.019	0.626 ± 0.028	0.665 ± 0.024
SVM	0.467 ± 0.015	0.441 ± 0.021	0.468 ± 0.013	0.679 ± 0.034	0.644 ± 0.007	0.680 ± 0.011
RF	0.588 ± 0.021	0.691 ± 0.020	0.669 ± 0.023	0.703 ± 0.021	0.804 ± 0.013	0.765 ± 0.021
ANN	0.506 ± 0.024	0.443 ± 0.027	0.400 ± 0.034	0.721 ± 0.014	0.639 ± 0.035	0.671 ± 0.018
	Pesticide (Without Ref Region)			*Pesticide (With Ref Region)*		
	RGB	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**
LR	0.314 ± 0.013	0.307 ± 0.018	0.317 ± 0.019	0.406 ± 0.016	0.399 ± 0.020	0.405 ± 0.034
SVM	0.317 ± 0.025	0.312 ± 0.026	0.315 ± 0.017	0.399 ± 0.015	0.411 ± 0.018	0.424 ± 0.032
RF	0.404 ± 0.012	0.479 ± 0.012	0.445 ± 0.010	0.528 ± 0.035	0.596 ± 0.026	0.542 ± 0.040
ANN	0.299 ± 0.024	0.341 ± 0.025	0.260 ± 0.027	0.401 ± 0.063	0.387 ± 0.071	0.354 ± 0.065

Input Features: 3-channels of each pixels of Downsampled 16*16 Image

	Food Dye (With Ref)			**Pesticide (With Ref)**		
	RGB	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**
LR	0.944 ± 0.010	0.753 ± 0.007	0.943 ± 0.004	0.975 ± 0.007	0.840 ± 0.013	0.977 ± 0.010
SVM	0.949 ± 0.004	0.781 ± 0.022	0.946 ± 0.008	0.971 ± 0.007	0.847 ± 0.017	0.971 ± 0.006
RF	0.718 ± 0.015	0.819 ± 0.008	0.839 ± 0.015	0.667 ± 0.026	0.724 ± 0.015	0.743 ± 0.035
ANN	0.868 ± 0.052	0.686 ± 0.098	0.711 ± 0.065	0.926 ± 0.012	0.753 ± 0.028	0.898 ± 0.027

Input Feature: Mean of a Single Channel (Channel with highest correlation)

	Food Dye (With Ref)			**Pesticide (With Ref)**		
	B(RGB)	**S(HSV)**	**B(LAB)**	**B(RGB)**	**S(HSV)**	**B(LAB)**
LR	0.289 ± 0.011	0.417 ± 0.015	0.397 ± 0.034	0.287 ± 0.009	0.339 ± 0.013	0.272 ± 0.025
SVM	0.298 ± 0.032	0.431 ± 0.016	0.402 ± 0.017	0.295 ± 0.021	0.346 ± 0.023	0.292 ± 0.019
RF	0.443 ± 0.013	0.523 ± 0.015	0.457 ± 0.017	0.344 ± 0.025	0.378 ± 0.028	0.339 ± 0.023
ANN	0.329 ± 0.019	0.439 ± 0.019	0.398 ± 0.021	0.298 ± 0.015	0.325 ± 0.025	0.271 ± 0.016

Cross-Validation Accuracy Results in $(mean \pm std)$ **after Reducing Concentration Labels**

Input Features: 3-channels of each pixels of Downsampled 16*16 Image

	Food Dye (With Ref)			**Pesticide (With Ref)**		
	RGB	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**
LR	0.989 ± 0.003	0.956 ± 0.007	0.987 ± 0.003	0.991 ± 0.002	0.947 ± 0.009	0.988 ± 0.009
SVM	0.989 ± 0.003	0.959 ± 0.009	0.988 ± 0.006	0.989 ± 0.005	0.947 ± 0.024	0.991 ± 0.004
RF	0.949 ± 0.009	0.960 ± 0.011	0.963 ± 0.013	0.891 ± 0.015	0.901 ± 0.004	0.903 ± 0.008
ANN	0.968 ± 0.014	0.948 ± 0.019	0.921 ± 0.027	0.963 ± 0.005	0.916 ± 0.017	0.882 ± 0.085

Input Feature: Individual Mean of of Each Color Channels (3 Means)

	Food Dye (With Ref)			**Pesticide (With Ref)**		
	RGB	**HSV**	**LAB**	**RGB**	**HSV**	**LAB**
LR	0.944 ± 0.007	0.932 ± 0.008	0.939 ± 0.009	0.840 ± 0.007	0.839 ± 0.011	0.847 ± 0.017
SVM	0.942 ± 0.009	0.931 ± 0.009	0.940 ± 0.009	0.842 ± 0.011	0.837 ± 0.018	0.843 ± 0.016
RF	0.932 ± 0.011	0.956 ± 0.012	0.941 ± 0.011	0.868 ± 0.019	0.878 ± 0.009	0.870 ± 0.014
ANN	0.946 ± 0.014	0.942 ± 0.016	0.935 ± 0.004	0.858 ± 0.013	0.844 ± 0.019	0.876 ± 0.019