

SUPPLEMENTARY MATERIAL

Temporary increase of official controls at border control posts in the European Union: theoretical assessment of the measures laid down in Commission Implementing Regulation EU/2019/1793

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Supplementary Table 1. Number of non-compliant consignments found at the EU BCPs level, from January 2020 to March 2024 (source: RASFF Portal: <https://webgate.ec.europa.eu/rasff-window/screen/search>).

Jan2020 - Mar2024	Food						Feed	
Country	Pesticides	Aflatoxins	Cyanide	Sulphites	Salmonella	Sudan Color	Aflatoxins	Salmonella
Argentina	0	1	0	0	0	0	0	0
Bolivia	0	4	0	0	0	0	4	0
Brazil	9	0	0	1	5	0	1	0
Cambodia	1	0	0	0	0	0	0	0
China	10	8	0	0	1	0	0	0
Dominican Republic	3	0	0	0	0	0	0	0
Egypt	50	26	0	0	7	0	0	0
Ethiopia	0	0	0	0	0	0	0	0
Georgia	0	6	0	0	0	0	0	0
Ghana	0	0	0	0	0	3	0	0
India	108	22	0	0	16	0	0	2
Indonesia	0	6	0	0	0	0	0	0
Iran	1	28	0	0	0	0	0	0
Kenya	27	0	0	0	0	0	0	0
Lebanon	0	0	0	0	0	0	0	0
Madagascar	11	0	0	0	0	0	0	0
Malaysia	0	0	0	0	0	0	0	0
Nigeria	0	1	0	0	18	0	0	0
Pakistan	46	13	0	0	1	0	0	0
Senegal	0	1	0	0	0	0	0	0
Serbia	7	0	0	0	0	0	0	0
Sri Lanka	3	1	0	0	0	0	0	0
Sudan	0	0	0	0	0	0	0	0
Syria	3	1	0	0	0	0	0	0
Thailand	1	0	0	0	0	0	0	0
Türkiye	129	73	2	1	5	0	1	0
Uganda	11	0	0	0	3	0	0	0
United States	1	77	0	0	0	0	1	0
Uzbekistan	0	0	0	0	0	0	0	0
Vietnam	26	0	0	0	0	0	0	0
Total amount	447	268	2	2	56	3	7	2

Supplementary Table 2. Residual prevalence of non-compliant consignments placed on the European Union market despite the increased official controls at the border control post level following the CIR EU/2019/1793.

Performance of the sampling and analysis methods	Starting prevalence	OCs' frequency				
		10%	20%	30%	40%	50%
A	0.01	0.009	0.008	0.007	0.006	0.005
	0.05	0.046	0.041	0.036	0.032	0.027
	0.10	0.091	0.083	0.074	0.065	0.055
	0.20	0.185	0.169	0.152	0.135	0.117
B	0.01	0.009	0.008	0.008	0.007	0.006
	0.05	0.046	0.042	0.039	0.035	0.031
	0.10	0.093	0.086	0.078	0.071	0.063
	0.20	0.187	0.174	0.160	0.146	0.131
C	0.01	0.009	0.008	0.008	0.007	0.006
	0.05	0.046	0.043	0.038	0.034	0.030
	0.10	0.093	0.086	0.078	0.070	0.061
	0.20	0.188	0.174	0.160	0.144	0.127

OCs, official controls; A, sensitivity of 95% and specificity of 99%; B, sensitivity of 80% and specificity of 99%; C, sensitivity of 95% and specificity of 80%.

Supplementary Table 3. Residual prevalence of non-compliant consignments placed on the European Union market despite the intensified official controls at the border control post level with an amplification factor $m=3$, after each non-compliant result.

Performance of the sampling and analysis methods	Starting prevalence	OCs' frequency				
		10%	20%	30%	40%	50%
A	0.01	0.0090	0.0080	0.0070	0.0060	0.0050
	0.05	0.0447	0.0394	0.0340	0.0285	0.0229
	0.10	0.0886	0.0768	0.0647	0.0523	0.0395
	0.20	0.1737	0.1455	0.1152	0.0826	0.0474
B	0.01	0.0092	0.0083	0.0075	0.0067	0.0058
	0.05	0.0457	0.0413	0.0368	0.0323	0.0278
	0.10	0.0908	0.0814	0.0717	0.0619	0.0517
	0.20	0.1796	0.1581	0.1354	0.1113	0.0858
C	0.01	0.0087	0.0072	0.0057	0.0040	0.0022
	0.05	0.0431	0.0355	0.0271	0.0178	0.0075
	0.10	0.0855	0.0692	0.0507	0.0295	0.0051
	0.20	0.1686	0.1308	0.0846	0.0267	0.0039

The value in grey is appraised as it involves sampling of all consignments presented. OCs, official controls; A, sensitivity of 95% and specificity of 99%; B, sensitivity of 80% and specificity of 99%; C, sensitivity of 95% and specificity of 80%.

Supplementary Table 4. Residual prevalence of non-compliant consignments placed on the European Union market despite the intensified official controls at the border control post level with an amplification factor $m=5$, after each non-compliant result.

Performance of the sampling and analysis methods	Starting prevalence	OCs' frequency				
		10%	20%	30%	40%	50%
A	0.01	0.0090	0.0080	0.0069	0.0059	0.0049
	0.05	0.0442	0.0382	0.0322	0.0261	0.0199
	0.10	0.0862	0.0720	0.0572	0.0420	0.0261
	0.20	0.1626	0.1212	0.0754	0.0242	0.0057
B	0.01	0.0091	0.0083	0.0074	0.0066	0.0057
	0.05	0.0453	0.0404	0.0356	0.0307	0.0257
	0.10	0.0892	0.0781	0.0667	0.0550	0.0429
	0.20	0.1725	0.1429	0.1110	0.0764	0.0389
C	0.01	0.0081	0.0059	0.0035	0.0004	0.0003
	0.05	0.0394	0.0272	0.0130	0.0019	0.0013
	0.10	0.0762	0.0474	0.0115	0.0033	0.0022
	0.20	0.1402	0.0551	0.0083	0.0057	0.0039

The values in grey are appraised as they involve sampling of all consignments presented. OCs, official controls; A, sensitivity of 95% and specificity of 99%; B, sensitivity of 80% and specificity of 99%; C, sensitivity of 95% and specificity of 80%.