

Table S1. Complete estimates from the final mixed-effects logistic model of compliance with three animal-based checkpoints at official animal welfare inspections on Swedish cattle farms in 2012–2017; $n=8,700$ inspections; farm identity included as random intercept.

Variable	Level	Odds ratio	Std. error	p	95% conf. interval
Intercept	-	3.20	0.69	<0.0001	2.10 , 4.87
Pasture area, ha	0–1	1 (base)		0.21 ⁷	
	1–5	0.87	0.14	0.34	0.63 , 1.20
	5–15	1.02	0.18	0.90	0.73 , 1.44
	>15	1.12	0.22	0.54	0.77 , 1.64
TUV A land percentage ¹ , %	0	1 (base)		0.18 ⁷	
	0–3	0.87	0.08	0.15	0.72 , 1.05
	3–12	0.79	0.09	0.040	0.64 , 0.99
	12–100	0.82	0.10	0.11	0.64 , 1.05
AES level ²	<i>Applied general values only</i>	1 (base)		0.0004 ⁷	
	<i>Applied special values, all granted</i>	1.65	0.19	<0.0001	1.31 , 2.07
	<i>Applied special values, partly granted</i>	1.55	0.19	0.0004	1.22 , 1.97
	<i>Applied special values, not granted</i>	1.29	0.18	0.074	0.98 , 1.71
	<i>Applied other values only</i>	1.12	0.21	0.57	0.77 , 1.62
	<i>No semi-natural grassland</i>	0.87	0.15	0.41	0.63 , 1.21
Total agricultural area, ha	1–20	1 (base)		0.027 ⁷	
	20–50	0.82	0.09	0.065	0.66 , 1.01
	50–100	0.71	0.08	0.0028	0.57 , 0.89
	>100	0.80	0.10	0.075	0.63 , 1.02
Geographical region ³	<i>South</i>	1 (base)		<0.0001 ⁷	
	<i>Middle</i>	1.52	0.14	<0.0001	1.27 , 1.81
	<i>North</i>	1.26	0.12	0.018	1.04 , 1.52
Inspection type ⁴	<i>Random</i>	1 (base)		<0.0001 ⁷	
	<i>Risk</i>	1.00	0.13	0.98	0.78 , 1.29
	<i>Complaint</i>	0.06	0.01	<0.0001	0.04 , 0.08
	<i>Follow-up</i>	0.24	0.03	<0.0001	0.19 , 0.32
	<i>Cross-compliance</i>	1.20	0.19	0.25	0.88 , 1.65
	<i>Other</i>	1.32	0.19	0.053	1.00 , 1.75
Inspection year	2012	1 (base)		0.0017 ⁷	
	2013	1.09	0.12	0.40	0.89 , 1.35
	2014	1.17	0.13	0.16	0.94 , 1.45
	2015	1.37	0.15	0.0033	1.11 , 1.69
	2016	1.50	0.16	0.0002	1.21 , 1.86
	2017	1.37	0.15	0.0032	1.11 , 1.68
Inspection season ⁵	<i>Spring</i>	1 (base)		<0.0001 ⁷	
	<i>Summer</i>	2.13	0.26	<0.0001	1.68 , 2.70
	<i>Autumn</i>	1.90	0.17	<0.0001	1.60 , 2.25
	<i>Winter</i>	0.73	0.05	<0.0001	0.64 , 0.84
Both species inspected ⁶	No	1 (base)		<0.0089 ⁷	
	Yes	1.35	0.16	0.0089	1.08 , 1.69

^{1–6} Explanations for these terms are given in the footnotes of Table 1. ⁷ Joint Wald test of effect.

Table S2. Complete estimates from the final mixed-effects logistic model of compliance with three animal-based checkpoints at official animal welfare inspections on Swedish cattle farms with TUV A land¹ in 2012–2017; $n=5,110$ inspections; farm identity included as random intercept.

Variable	Level	Odds ratio	Std. error	<i>p</i>	95% conf. interval
Intercept	-	4.07	1.62	0.0004	1.87 , 8.87
Pasture area, ha	0–1	1 (base)		0.057 ⁹	
	1–5	0.50	0.17	0.037	0.26 , 0.96
	5–15	0.64	0.22	0.19	0.33 , 1.24
	>15	0.69	0.24	0.29	0.35 , 1.37
TUV A land percentage ¹ , %	0–3	1 (base)		0.68 ⁹	
	3–12	0.90	0.11	0.39	0.71 , 1.14
	12–100	0.91	0.13	0.48	0.69 , 1.19
AES level ²	<i>Applied general values only</i>	1 (base)		0.011 ⁹	
	<i>Applied special values, all granted</i>	1.53	0.20	0.0009	1.19 , 1.96
	<i>Applied special values, partly granted</i>	1.43	0.19	0.0087	1.09 , 1.86
	<i>Applied special values, not granted</i>	1.36	0.25	0.086	0.96 , 1.94
	<i>Applied other values only</i>	1.21	0.28	0.41	0.77 , 1.91
	<i>No semi-natural grassland</i>	0.59	0.21	0.14	0.29 , 1.19
Indicator plant species ³	0–4	1 (base)		0.95 ⁹	
	5–8	1.03	0.12	0.80	0.82 , 1.30
	>8	1.00	0.13	0.99	0.78 , 1.28
Natura 2000 ⁴	No	1 (base)		0.059 ⁹	
	Yes	1.36	0.22	0.059	0.99 , 1.88
Total agricultural area, ha	1–20	1 (base)		0.13 ⁹	
	20–50	0.99	0.17	0.97	0.71 , 1.39
	50–100	0.75	0.13	0.11	0.53 , 1.06
	>100	0.81	0.15	0.27	0.56 , 1.17
Geographical region ⁵	<i>South</i>	1 (base)		0.28 ⁹	
	<i>Middle</i>	1.20	0.14	0.11	0.96 , 1.51
	<i>North</i>	1.04	0.14	0.75	0.80 , 1.36
Inspection type ⁶	<i>Random</i>	1 (base)		<0.0001 ⁹	
	<i>Risk</i>	0.94	0.16	0.71	0.67 , 1.32
	<i>Complaint</i>	0.05	0.01	<0.0001	0.03 , 0.08
	<i>Follow-up</i>	0.20	0.04	<0.0001	0.14 , 0.28
	<i>Cross-compliance</i>	1.05	0.22	0.81	0.69 , 1.60
	<i>Other</i>	1.12	0.21	0.54	0.78 , 1.62
Inspection year	2012	1 (base)		0.0079 ⁹	
	2013	1.15	0.16	0.32	0.88 , 1.51
	2014	1.07	0.15	0.65	0.80 , 1.42
	2015	1.33	0.19	0.041	1.01 , 1.76
	2016	1.62	0.23	0.0007	1.23 , 2.15
	2017	1.40	0.19	0.016	1.07 , 1.83
Inspection season ⁷	<i>Spring</i>	1 (base)		<0.0001 ⁹	
	<i>Summer</i>	2.21	0.37	<0.0001	1.60 , 3.07
	<i>Autumn</i>	1.85	0.21	<0.0001	1.47 , 2.32
	<i>Winter</i>	0.67	0.06	<0.0001	0.56 , 0.81
Both species inspected ⁸	No	1 (base)		0.024 ⁹	
	Yes	1.39	0.20	0.024	1.04 , 1.85

^{1–8} Explanations for these terms are given in the footnotes of Table 1. ⁹ Joint Wald test of effect.

Table S3. Complete estimates from the final mixed-effects logistic model of compliance with three animal-based checkpoints at official animal welfare inspections on Swedish sheep farms in 2012–2017; $n=2,823$ inspections; farm identity included as random intercept.

Variable	Level	Odds ratio	Std. error	p	95% conf. interval
Intercept	-	7.42	2.92	<0.0001	3.43 , 16.05
Pasture area, ha	0–1	1 (base)		0.016 ⁷	
	1–5	0.64	0.18	0.11	0.37 , 1.11
	5–15	1.14	0.35	0.68	0.62 , 2.08
	>15	1.01	0.38	0.97	0.49 , 2.10
TUVÅ land percentage ¹ , %	0	1 (base)		0.89 ⁷	
	0–3	1.15	0.24	0.50	0.77 , 1.72
	3–12	0.99	0.22	0.97	0.64 , 1.52
	12–100	0.96	0.19	0.84	0.65 , 1.43
AES level ²	<i>Applied general values only</i>	1 (base)		0.29 ⁷	
	<i>Applied special values, all granted</i>	1.29	0.28	0.23	0.85 , 1.96
	<i>Applied special values, partly granted</i>	1.09	0.27	0.74	0.66 , 1.78
	<i>Applied special values, not granted</i>	0.94	0.24	0.80	0.56 , 1.56
	<i>Applied other values only</i>	0.78	0.28	0.49	0.39 , 1.57
	<i>No semi-natural grassland</i>	0.58	0.17	0.060	0.33 , 1.02
Total agricultural area, ha	1–20	1 (base)		0.0006 ⁷	
	20–50	0.55	0.09	0.0005	0.40 , 0.77
	50–100	0.40	0.10	0.0003	0.25 , 0.66
	>100	0.42	0.15	0.014	0.21 , 0.84
Cereals and oilseeds area, ha	0	1 (base)		0.023 ⁷	
	0–7	1.19	0.21	0.31	0.85 , 1.67
	7–27	1.61	0.37	0.039	1.02 , 2.53
	>27	2.77	1.00	0.0050	1.36 , 5.64
Geographical region ³	<i>South</i>	1 (base)		0.0041 ⁷	
	<i>Middle</i>	1.78	0.31	0.0009	1.27 , 2.51
	<i>North</i>	1.43	0.29	0.071	0.97 , 2.12
Landscape type ⁴	<i>Arable-dominated</i>	1 (base)		0.036 ⁷	
	<i>Mosaic</i>	1.46	0.27	0.039	1.02 , 2.08
	<i>Forest-dominated</i>	1.02	0.18	0.93	0.71 , 1.45
	<i>No agricultural land</i>	0.42	0.21	0.081	0.16 , 1.11
Inspection type ⁵	<i>Random</i>	1 (base)		<0.0001 ⁷	
	<i>Risk</i>	0.84	0.21	0.48	0.51 , 1.38
	<i>Complaint</i>	0.03	0.01	<0.0001	0.02 , 0.06
	<i>Follow-up</i>	0.12	0.03	<0.0001	0.07 , 0.21
	<i>Cross-compliance</i>	1.12	0.36	0.72	0.60 , 2.11
	<i>Other</i>	0.93	0.26	0.79	0.53 , 1.62
Inspection year	2012	1 (base)		0.032 ⁷	
	2013	0.99	0.22	0.95	0.64 , 1.52
	2014	0.96	0.21	0.85	0.62 , 1.47
	2015	1.72	0.39	0.017	1.10 , 2.68
	2016	1.47	0.34	0.094	0.94 , 2.31
	2017	1.28	0.28	0.26	0.83 , 1.98
Inspection season ⁶	<i>Spring</i>	1 (base)		0.0015 ⁷	
	<i>Summer</i>	1.73	0.38	0.013	1.12 , 2.67
	<i>Autumn</i>	1.79	0.30	0.0005	1.29 , 2.48
	<i>Winter</i>	1.44	0.21	0.013	1.08 , 1.93

^{1–6} Explanations for these terms are given in the footnotes of Table 1. ⁷ Joint Wald test of effect.

Table S4. Complete estimates from the final mixed-effects logistic model of compliance with three animal-based checkpoints at official animal welfare inspections on Swedish sheep farms with TUVA land¹ in 2012–2017; $n=1,404$ inspections; farm identity included as random intercept.

Variable	Level	Odds ratio	Std. error	<i>p</i>	95% conf. interval
Intercept	-	11.07	8.31	0.0014	2.54 , 48.17
Pasture area, ha	0–1	1 (base)		0.084 ⁸	
	1–5	0.62	0.37	0.42	0.19 , 2.01
	5–15	1.16	0.73	0.81	0.34 , 3.96
	>15	1.27	0.87	0.73	0.33 , 4.86
TUVA land percentage ¹ , %	0–3	1 (base)		0.66 ⁸	
	3–12	0.78	0.23	0.39	0.44 , 1.38
	12–100	0.79	0.24	0.43	0.44 , 1.42
AES level ²	<i>Applied general values only</i>	1 (base)		0.42 ⁸	
	<i>Applied special values, all granted</i>	1.03	0.27	0.90	0.62 , 1.72
	<i>Applied special values, partly granted</i>	0.93	0.30	0.83	0.50 , 1.74
	<i>Applied special values, not granted</i>	1.29	0.54	0.54	0.57 , 2.95
	<i>Applied other values only</i>	0.45	0.21	0.090	0.18 , 1.13
	<i>No semi-natural grassland</i>	0.48	0.32	0.27	0.13 , 1.78
Indicator plant species ³	0–4	1 (base)		0.14 ⁸	
	5–8	0.98	0.26	0.95	0.59 , 1.64
	>8	0.63	0.18	0.10	0.36 , 1.10
Natura 2000 ⁴	No	1 (base)		0.30 ⁸	
	Yes	1.44	0.51	0.30	0.72 , 2.89
Total agricultural area, ha	1–20	1 (base)		0.13 ⁸	
	20–50	0.66	0.17	0.10	0.39 , 1.09
	50–100	0.50	0.16	0.034	0.26 , 0.95
	>100	0.80	0.31	0.57	0.37 , 1.72
Geographical region ⁵	<i>South</i>	1 (base)		0.37 ⁸	
	<i>Middle</i>	1.40	0.34	0.16	0.88 , 2.24
	<i>North</i>	1.17	0.32	0.58	0.68 , 2.01
Inspection type ⁶	<i>Random</i>	1 (base)		<0.0001 ⁸	
	<i>Risk</i>	0.72	0.28	0.39	0.34 , 1.54
	<i>Complaint</i>	0.02	0.01	<0.0001	0.01 , 0.05
	<i>Follow-up</i>	0.07	0.03	<0.0001	0.03 , 0.17
	<i>Cross-compliance</i>	0.86	0.41	0.76	0.34 , 2.18
	<i>Other</i>	0.98	0.42	0.96	0.42 , 2.29
Inspection year	2012	1 (base)		0.59 ⁸	
	2013	1.25	0.42	0.52	0.64 , 2.43
	2014	1.23	0.42	0.55	0.63 , 2.40
	2015	1.67	0.58	0.14	0.84 , 3.30
	2016	1.79	0.63	0.098	0.90 , 3.56
	2017	1.34	0.45	0.38	0.70 , 2.57
Inspection season ⁷	<i>Spring</i>	1 (base)		0.0041 ⁸	
	<i>Summer</i>	2.01	0.66	0.034	1.06 , 3.84
	<i>Autumn</i>	2.57	0.71	0.0006	1.50 , 4.40
	<i>Winter</i>	1.36	0.30	0.16	0.88 , 2.10

^{1–7} Explanations for these terms are given in the footnotes of Table 1. ⁸ Joint Wald test of effect.