

Field studies evaluating bait acceptance and handling by dogs in Navajo Nation, USA

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Supplemental Material:

Table S1. Bait acceptance for the 3 bait types and 2 blister types; unknowns not further included in statistical data analysis.

		Yes			No			Unknown
Bait	Blister	n	%	95% CI	n	%	95%CI	n
Egg	Hard	140	74.5	67.6 – 80.5	48	25.5	19.5 – 32.4	4
	Soft	110	81.5	73.9 – 87.6	25	18.5	12.4 – 26.1	3
	Subtotal	250	77.4	72.4 – 81.8	73	22.6	18.2 – 27.6	7
Fish	Hard	40	87.0	73.7 – 95.1	6	13.0	4.9 – 26.3	-
	Soft	33	75.0	59.7 – 86.8	11	25.0	13.2 – 40.3	1
	Subtotal	73	81.1	71.5 – 88.6	17	23.3	11.4 – 28.5	1
Intestine	Hard	39	88.6	75.4 – 96.2	5	11.4	3.8 – 24.6	-
	Soft	40	95.2	83.8 – 99.4	2	4.8	0.6 – 16.2	-
	Subtotal	79	91.9	83.9 – 96.7	7	8.1	3.3 – 16.1	-
Subtotal	Hard	219	80.0	73.5 – 83.4	59	20.0	16.6 - 26.5	4
	Soft	183	82.8	77.2 – 87.5	38	17.2	12.5 – 22.8	4
Total		402	80.6	76.8 – 83.9	97	19.4	16.1 – 23.2	8

Table S2. Amount (%) of bait consumed by dog upon acceptance for the 3 bait types and 2 blister types; unknowns not further included in statistical data analysis.

Bait	Blister	<50%			>50%			100%			Unknown
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n
Egg	Hard	11	9.0	4.6 – 15.6	5	4.1	1.3 – 9.3	106	86.9	79.6 – 92.3	18
	Soft	3	3.0	0.6 – 8.5	7	7.0	2.9 – 13.9	90	90.0	82.4 – 95.3	10
	Subtotal	14	6.3	3.5 – 10.4	12	5.4	2.8 – 9.3	196	88.3	83.3 – 92.2	28
Fish	Hard	2	5.1	0.6 – 17.3	3	7.7	1.6 – 20.9	34	87.2	72.6 – 95.7	1
	Soft	1	3.2	0.1 – 16.7	2	6.5	0.8 – 21.4	28	90.3	74.2 – 98.0	2
	Subtotal	3	4.3	0.9 – 12.0	5	7.1	2.4 – 15.9	62	88.6	78.7 – 94.9	3
Intestine	Hard	-	-	0 – 10.0	1	2.9	0.1 – 14.9	34	97.1	85.1 – 99.9	4
	Soft	-	-	0 – 9.3	1	2.6	0.1 – 13.8	37	97.4	86.2 – 99.9	2
	Subtotal	-	-	0 – 4.9	2	2.7	0.3 – 9.5	71	97.3	90.5 – 99.7	6
Subtotal	Hard	13	6.6	3.6 – 11.1	9	4.6	2.1 – 8.5	174	88.8	83.5 – 92.8	23
	Soft	4	2.4	0.6 – 5.9	10	5.9	2.9 – 10.6	155	91.7	86.5 – 95.4	14
Total		17	4.7	2.7 – 7.4	19	5.2	3.2 – 8.0	329	90.1	86.6 – 93.0	37

Table S3. Bait handling time (seconds) upon acceptance for the 3 bait types and 2 blister types; unknowns not further included in statistical data analysis.

Bait	Blister	<10 sec			10-30 sec			30-60 sec			>60 sec			Unknown
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI	n
Egg	Hard	19	14.5	9.0 – 21.7	13	9.9	5.4 – 16.4	24	18.3	12.1 – 26.0	75	57.3	48.3 – 65.9	9
	Soft	19	17.8	11.0 – 26.3	14	13.1	7.3 – 21.0	20	18.7	11.8 – 27.4	54	50.5	40.6 – 60.3	3
	Subtotal	38	16.0	11.6 – 21.3	27	11.3	7.6 – 16.1	44	18.5	13.8 – 24.0	129	54.2	47.6 – 60.7	12
Fish	Hard	3	7.7	1.6 – 20.9	4	10.3	2.9 – 24.2	11	28.2	15.0 – 44.9	21	53.8	37.2 – 69.9	1
	Soft	7	22.6	9.6 – 41.1	4	12.9	3.6 – 29.8	4	12.9	3.6 – 29.8	16	51.6	33.1 – 69.8	2
	Subtotal	10	14.3	7.1 – 24.7	8	11.4	5.1 – 21.3	15	21.4	12.5 – 32.9	37	52.9	40.6 – 64.9	3
Intestine	Hard	9	25.0	12.1 – 42.2	8	22.2	10.1 – 39.2	8	22.2	10.1 – 39.2	11	30.6	16.3 – 48.1	3
	Soft	23	59.0	42.1 – 74.4	7	17.9	7.5 – 33.5	6	15.4	5.9 – 30.5	3	7.7	1.6 – 20.9	1
	Subtotal	32	42.7	31.3 – 54.6	15	20.0	11.6 – 30.8	14	18.7	10.6 – 29.3	14	18.7	10.6 – 29.3	4
Subtotal	Hard	31	15.0	10.5 – 20.7	25	12.1	8.0 – 17.4	43	20.9	15.5 – 27.1	107	51.9	44.9 – 58.9	13
	Soft	49	27.7	21.2 – 34.9	25	14.1	9.4 – 20.1	30	16.9	11.7 – 23.3	73	41.2	33.9 – 48.9	6
Total		80	20.9	16.9 – 25.3	50	13.1	9.8 – 16.8	73	19.1	15.2 – 23.4	180	47.0	41.9 – 52.1	19

Table S4. The number of animals that swallowed or discarded the blister after bait acceptance for the 3 bait types and 2 blister types; unknowns not further included in statistical data analysis.

		Swallowed			Discarded			Unknown
Bait	Blister	n	%	95% CI	n	%	95% CI	n
Egg	Hard	57	42.2	33.8 – 51.0	78	57.8	49.0 – 66.2	5
	Soft	82	80.4	71.4 – 87.6	20	19.6	12.4 – 28.6	8
	Subtotal	139	58.6	52.1 – 65.0	98	41.4	35.0 – 47.9	13
Fish	Hard	6	15.8	6.0 – 31.3	32	84.2	68.7 – 94.0	2
	Soft	20	66.7	47.2 – 82.7	10	33.3	17.3 – 52.8	3
	Subtotal	26	38.2	26.7 – 50.8	42	61.8	49.2 – 73.3	5
Intestine	Hard	27	73.0	55.9 – 86.2	10	27.0	13.8 – 44.1	2
	Soft	37	94.9	82.7 – 99.4	2	5.1	0.6 – 17.3	1
	Subtotal	64	84.2	74.0 – 91.6	12	15.8	8.4 – 26.0	3
Subtotal	Hard	90	42.9	30.1 – 49.8	120	57.1	50.2 – 63.9	9
	Soft	139	81.3	74.6 – 86.8	32	18.7	13.2 – 25.4	12
Total		229	60.3	54.0 – 65.1	152	39.9	34.9 – 45.0	21

Table S5. Number of blisters perforated / ruptured (yes) or not (no) after bait acceptance for the 3 bait types and 2 blister types; unknowns not further included in statistical data analysis.

Blister Perforated:		Yes			No			Unknown
Bait	Blister	n	%	95% CI	n	%	95% CI	n
Egg	Hard	112	94.9	89.3 – 98.1	6	5.1	1.9 – 10.7	22
	Soft	90	94.7	88.1 – 98.3	5	5.3	1.7 – 11.9	15
	Subtotal	202	94.8	90.9 – 97.4	11	5.2	2.6 – 9.1	37
Fish	Hard	29	78.4	61.8 – 90.2	8	21.6	9.8 – 38.2	3
	Soft	22	88.0	68.8 – 97.5	3	12.0	2.5 – 31.2	8
	Subtotal	51	82.3	70.5 – 90.8	11	17.7	9.2 – 29.5	11
Intestine	Hard	28	96.6	82.2 – 99.9	1	3.4	0.1 – 17.8	10
	Soft	19	76.0	54.9 – 90.6	6	24.0	9.4 – 45.1	15
	Subtotal	47	87.0	75.1 – 94.6	7	13.0	5.4 – 24.9	25
Subtotal	Hard	169	91.8	86.9 – 95.4	15	8.2	4.6 – 13.1	35
	Soft	131	90.3	84.3 – 94.6	14	9.7	5.4 – 15.7	38
Total		300	91.2	87.6 – 94.0	29	8.8	6.0 – 12.4	73

Table S6. Number of dogs that accepted a bait and were considered vaccinated (likely) or not (not likely) in case that the blister would have contained a vaccine for the 3 bait types and 2 blister types; unknowns not further included in statistical data analysis.

Vaccination:		Likely			Not Likely			Unknown
Bait	Blister	n	%	95% CI	n	%	95% CI	n
Egg	Hard	114	91.2	84.8 - 95.5	11	8.8	4.5 - 15.2	15
	Soft	90	88.2	80.4 - 93.8	12	11.8	6.2 - 19.6	8
	Subtotal	204	89.9	85.2 - 93.5	23	10.1	6.5 - 14.8	23
Fish	Hard	20	55.6	38.1 - 72.1	16	44.4	27.9 - 61.9	4
	Soft	24	85.7	67.3 - 96.0	4	14.3	4.0 - 32.7	5
	Subtotal	44	68.8	55.9 - 79.8	20	31.3	20.2 - 44.1	9
Intestine	Hard	29	87.9	71.8 - 96.6	4	12.1	3.4 - 28.2	6
	Soft	23	79.3	60.3 - 92.0	6	20.7	8.0 - 39.7	11
	Subtotal	52	83.9	72.3 - 92.0	10	16.1	8.0 - 21.9	17
Subtotal	Hard	163	84.0	78.1 - 88.9	31	16.0	11.1 - 21.9	25
	Soft	137	86.2	79.8 - 91.1	22	13.8	8.9 - 20.2	24
Total		300	85.0	80.8 - 88.5	53	15.0	11.5 - 19.2	49

Table S7. Bait acceptance and the effectiveness (likelihood of vaccination) for the 3 bait types and 2 blister types analyzed from animals for which data on both parameters (acceptance and effectiveness), were available (N = 450). This included individuals that did not accept the bait and therefore were not vaccinated.

		N	Bait Accepted			Effectiveness		
Bait	Blister		n	%	95% CI	n	%	95% CI
Egg	Hard	173	125	72.3	64.9 - 78.8	114	65.9	58.3 - 72.9
	Soft	127	102	80.3	72.3 - 86.8	90	70.9	62.1 - 78.6
	Subtotal	300	227	75.7	70.4 - 80.4	204	68.0	62.4 - 73.2
Fish	Hard	42	36	85.7	71.5 - 94.6	20	47.6	32.0 - 63.6
	Soft	39	28	71.8	55.1 - 85.0	24	61.5	44.6 - 76.6
	Subtotal	81	64	79.0	68.5 - 87.3	44	54.5	42.9 - 65.4
Intestine	Hard	38	33	86.8	71.9 - 95.6	29	76.3	59.8 - 88.6
	Soft	31	29	93.5	78.6 - 99.2	23	74.2	55.4 - 88.1
	Subtotal	69	62	89.9	80.2 - 95.8	52	75.4	63.5 - 84.9
Subtotal	Hard	253	194	76.7	71.0 - 81.7	163	64.4	58.2 - 70.3
	Soft	197	159	80.7	74.5 - 86.0	137	69.5	62.6 - 75.9
Total		450	353	78.4	74.4 - 82.2	300	66.7	62.1 - 71.0

Table S8. Bait handling time (seconds) and the subsequent effectiveness of the vaccination attempt (likely or not likely vaccinated) for the 3 bait types; unknowns (effectiveness) not included in data analysis.

Handling Time (sec)	Bait	Likely			No		
		n	%	95% CI	n	%	95% CI
<10	Egg	16	55.2	35.7 – 73.6	13	44.8	26.4 – 64.3
	Fish	3	50.0	11.8 – 88.2	3	50.0	11.8 – 88.2
	Intestine	13	65.0	40.8 – 84.6	7	35.0	15.4 – 59.2
	Total	32	58.2	44.1 – 71.3	23	41.8	55.9 – 28.7
10-30	Egg	24	92.3	74.9 – 99.1	2	7.7	0.9 – 25.1
	Fish	6	75.0	34.9 – 96.8	2	25.0	3.2 – 65.1
	Intestine	11	91.7	61.5 – 99.8	1	8.3	0.2 – 38.5
	Total	41	89.1	76.4 – 96.4	5	10.9	3.6 – 23.6
30-60	Egg	42	100.0	91.6 – 100	0	0.0	0 – 8.4
	Fish	9	60.0	32.3 – 83.7	6	40.0	16.3 – 67.7
	Intestine	13	92.9	66.1 – 99.8	1	7.1	0.2 – 33.9
	Total	64	90.1	80.7 – 95.9	7	9.9	4.1 – 19.3
>60	Egg	111	93.3	87.2 – 97.1	8	6.7	2.9 – 12.8
	Fish	23	71.9	53.3 – 86.3	9	28.1	13.7 – 46.7
	Intestine	11	91.7	61.5 – 99.8	1	8.3	0.2 – 38.5
	Total	145	87.7	83.1 – 93.3	18	11.0	6.7 – 16.9

Table S9. Bait acceptance by owned and community (including strays or ownerless) dogs for the 3 bait types and 2 blister types; unknowns (ownership status) not included in data analysis.

		Owned			Community		
Bait	Blister	n	%	95% CI	n	%	95% CI
Egg	Hard	108	73.5	65.6 – 80.4	22	84.6	65.1 – 95.6
	Soft	89	84.8	76.4 – 91.0	13	72.2	46.5 – 90.3
	Subtotal	197	78.2	72.6 – 83.1	35	79.5	64.7 – 90.2
Fish	Hard	33	86.8	71.9 – 95.6	7	100.0	59.0 – 100
	Soft	27	75.0	54.1 – 84.6	5	83.3	35.9 – 99.6
	Subtotal	60	81.1	70.3 – 89.3	12	92.3	64.0 – 99.8
Intestine	Hard	27	84.4	67.2 – 94.7	8	100.0	63.1 – 100
	Soft	32	94.1	80.3 – 99.3	7	100.0	59.0 – 100
	Subtotal	59	89.4	79.4 – 95.6	15	100.0	78.2 – 100
Subtotal	Hard	168	77.4	71.3 – 82.8	37	90.2	76.9 – 97.3
	Soft	148	84.6	78.4 – 89.6	25	80.6	62.5 – 92.5
Total		316	80.6	76.3 – 84.4	62	86.1	75.9 – 93.1