(Natasha Pettifor photo)

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Copper oxide wire particles (COWP) to control Haemonchus contortus in a flock of dairy goats

(tatiana Stanton, Betsy Hodge, Natasha Pettifor, Chris Posbergh, Michael Thonney)

Funded by
- Cornell University Experiment Station (Hatch) funds
- Cornell University Cooperative Extension (Smith-Lever) funds
- NESARE
- Northern New York Agricultural Development Program

Experimental design (15 does/COWP level)
- 1 g COWP/10 kg live weight (farmer's dose)
- 1 g COWP/doe
- 2 g COWP/doe

Sampling: Days 0, 14, 28, 42

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Copper oxide wire particles (COWP) to control Haemonchus contortus in a flock of dairy goats

Table 1. Effect of copper oxide wire particles (COWP) and date on fecal egg counts in lactating does[1].

	Strongyles		Haemonchus	
Item	Log_e	Antilog, eggs/g feces	Log_e	Antilog, eggs/g feces
COWP				
1 g/10 kg BW	7.22	1372	7.18	1310
1 g/doe	7.26	1418	7.17	1305
2 g/doe	7.05	1149	6.91	1005
SE	0.200		0.205	
P-value	0.717		0.580	
Date				
27 May 2013	7.32	1504	7.27	1437
10 June 2013	6.92	1009	6.85	945
24 June 2013	7.00	1099	6.91	1000
8 July 2013	7.47	1751	7.32	1518
SE	0.136		0.166	
P-value	0.013		0.092	

[1]The COWP x Date interactions were not significant.

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Copper oxide wire particles (COWP) to control Haemonchus contortus in a flock of dairy goats

Table 2. Effect of copper oxide wire particles (COWP) on the change in fecal egg counts after 14 days in lactating does.

COWP	Strongyles	Haemonchus
1 g/10 kg BW	-1185	-1153
1 g/doe	75	107
2 g/doe	-1191	-1226
SE	477.9	484.6
P-value for 1 g/head vs average of 1 g/10 kg and 2 g/head	0.036	0.034
P-value for 1 g/10 kg vs 2 g/head	0.993	0.914

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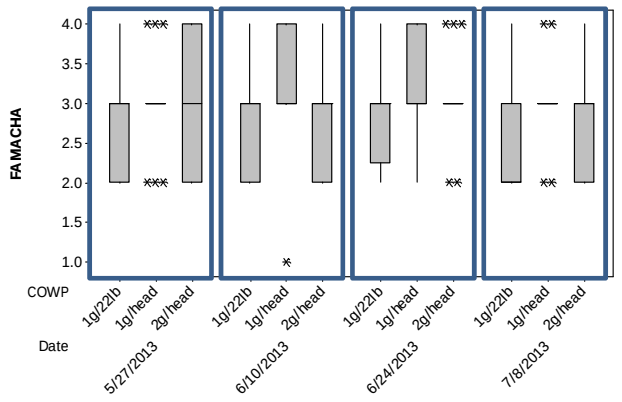
Copper oxide wire particles (COWP) to control Haemonchus contortus in a flock of dairy goats



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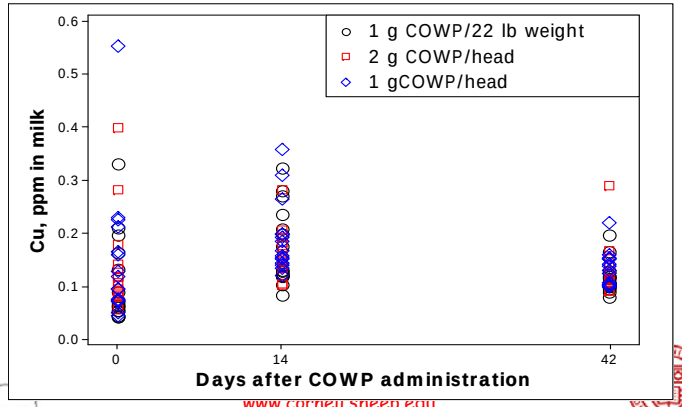
Copper oxide wire particles (COWP) to control Haemonchus contortus in a flock of dairy goats

- No effect on cheese-making
- Much below legal limit of 2? mg/kg



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Copper oxide wire particles COWP to control Haemonchus contortus in grazing lambs (tatiana Stanton, Betsy Hodge, Natasha Pettifor, Chris Posbergh, Michael Thonney)

Funded by
- Cornell University Experiment Station (Hatch) funds
- Cornell University Cooperative Extension (Smith-Lever) funds
- NESARE
- Northern New York Agricultural Development Program

Experimental design (15 lambs per COWP level)
- 0 g COWP
- 1 g COWP
- 2 g COWP

Sampling: Days 0, 14, 28

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Copper oxide wire particles COWP to control Haemonchus contortus in grazing lambs

St. Lawrence County Extension Learning Farm

Table 1. Effect of copper oxide wire particles (COWP) and days on fecal egg counts for the St. Lawrence County Extension Learning Farm.

		Strongyles		Haemonchus	
COWP, g	Days	Log_e	Antilog, eggs/g feces	Log_e	Antilog, eggs/g feces
0 (control)	0	5.22	185	5.14	171
	14	7.39	1620	7.37	1588
	28	7.56	1920	7.38	1604
0.5	0	4.20	67	4.13	62
	14	2.66	14	2.02	8
	28	6.12	455	5.93	376
1	0	5.46	235	5.29	198
	14	3.07	22	2.63	14
	28	6.19	488	5.68	293
SE		0.728		0.736	
P-value		0.026		0.010	

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Downing Farm

Table 2. Effect of COWP and date on fecal egg counts for Downing Farm[1].

Item	Strongyles Log$_e$	Strongyles Antilog, eggs/g feces	Haemonchus Log$_e$	Haemonchus Antilog, eggs/g feces
COWP, g				
0 (control)	5.45	233	4.85	128
0.5	5.69	296	4.53	93
1	5.74	311	4.90	134
SE	0.713		0.808	
P-value for control vs COWP	0.626		0.818	
P-value for 0.5 vs 1 g	0.925		0.585	
Days after COWP				
0	6.10	446	5.30	200
14	5.54	255	4.80	122
28	5.23	187	4.18	65
SE	0.244		0.291	
P-value linear contrast	0.013		0.008	
P-value quadratic contrast	0.675		0.863	

[1]The COWP x Date interaction was not significant.

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Stone Barn Farms

Table 3. Effect of copper oxide wire particles (COWP) and date on fecal egg counts for Stone Barns Farm[1].

Item	Strongyles Log$_e$	Strongyles Antilog, eggs/g feces	Haemonchus Log$_e$	Haemonchus Antilog, eggs/g feces
COWP, g				
0 (control)	6.94	1033	6.89	982
0.5	5.76	317	5.56	260
1	6.26	523	6.10	446
SE	0.614		0.654	
P-value for control vs COWP	0.010		0.006	
P-value for 0.5 vs 1 g	0.212		0.210	
Days after COWP				
0	6.19	488	6.02	412
14	6.22	503	6.07	433
28	6.55	699	6.47	645
SE	0.243		0.255	
P-value linear contrast	0.297		0.227	
P-value quadratic contrast	0.608		0.581	

[1]The COWP x Date interactions were not significant.

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Effectiveness of ivermectin to treat ewes and does infected with *Parelaphostrongylus tenuis*

(Mary Smith, tatiana Stanton, Natasha Pettifor, Michael Thonney)

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Establish *P. tenuis* infections in a Cornell group of naïve ewes followed by challenges to test for resistance using available L3 larvae and by generating new L3 larvae (Michael Thonney, Lucille Gagliardo, Katherine Churchill, Judy Appleton, Natasha Pettifor)

Design

- 12 "Control" ewes (200 L3 on 21 October 2014) [1 died in January 2014]
- 12 Infected (20 L3 on 22 October 2013, 200 L3 on 21 October 2014)
- 7 Sentinal ewes

- Never on pasture
- Blood samples on 22 October 2013 and every 2 weeks to late March 2014
- Blood samples on 21 October 2014 and every 2 weeks to late March 2015
- Any ewe with symptoms is aggressively treated

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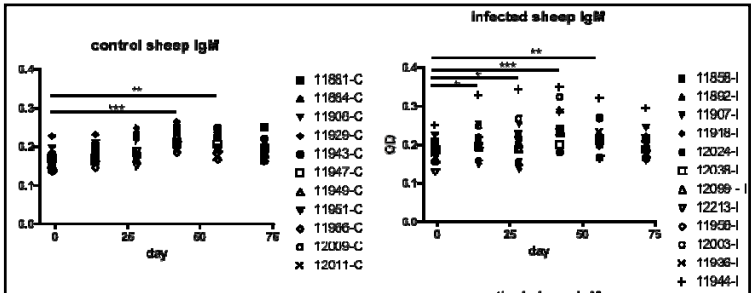

IgM antibodies are the first antibodies produced in response to infection.

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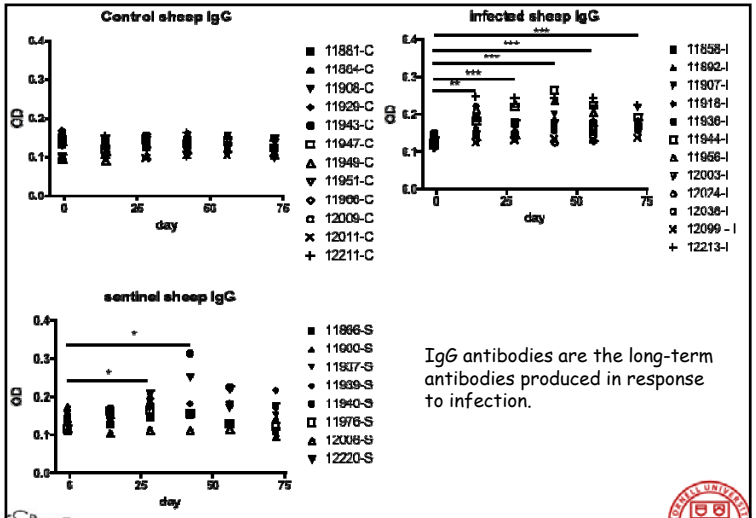

IgG antibodies are the long-term antibodies produced in response to infection.

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