

# USDA SARE

## Improving Small Ruminant Parasite Control in New England

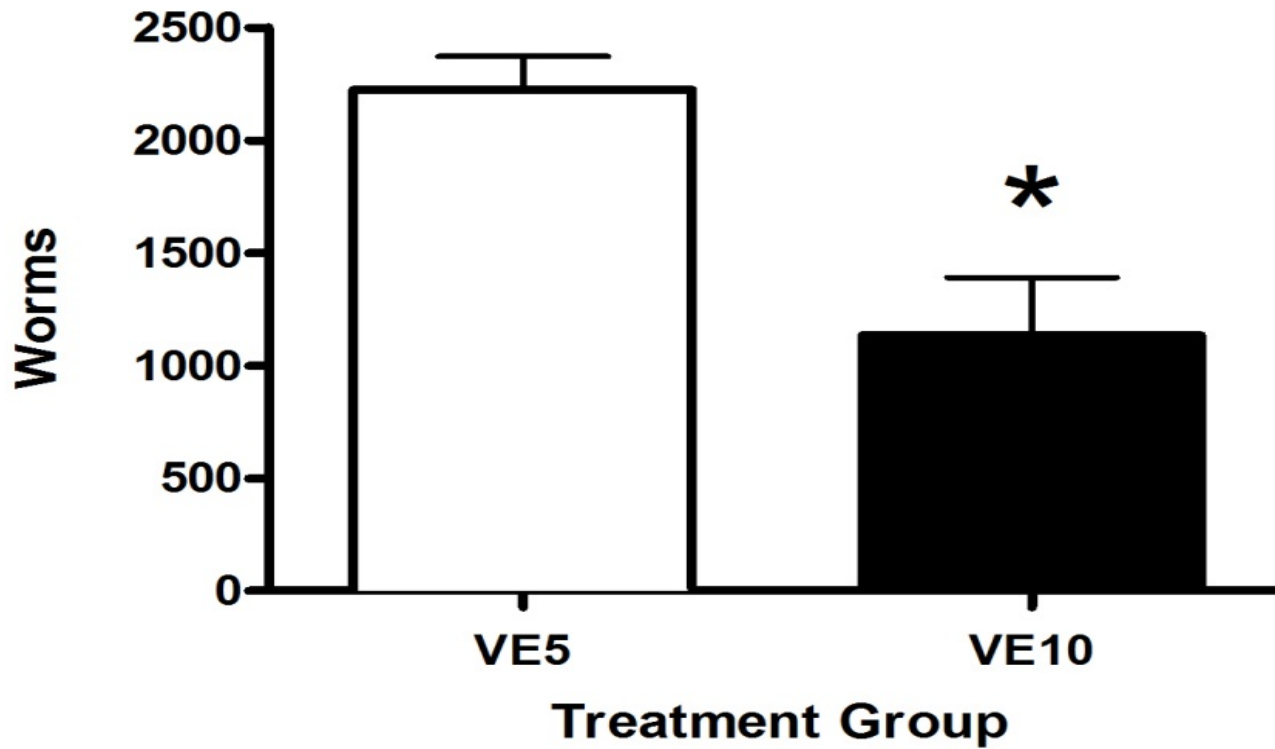


# The Effect of Vitamin E Supplementation on an Experimental *Haemonchus Contortus* Infection in Lambs

Evaluate the effects of vitamin E supplementation (10 IU/kg BW/day) on lambs experimentally infected with *Haemonchus contortus*

# Results

## Abomasal Worm Burden

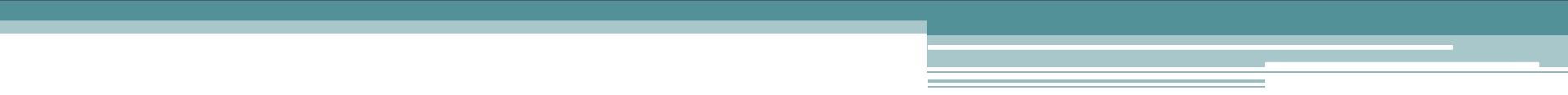


# Conclusions

- There was a 50% reduction in abomasal worm burden in sheep supplemented with 10 IU/kg bw/day



Anthelmintic effect of cranberry  
leaf powder and cranberry leaf  
proanthocyanidin extract on ovine  
*Haemonchus contortus*



# Cranberry Leaf Proanthocyanidin (PAC)

- Cranberry leaves contains high levels of Proanthocyanidin condensed tannin
- Leaves are by-product of harvest
- Wisconsin and Massachusetts

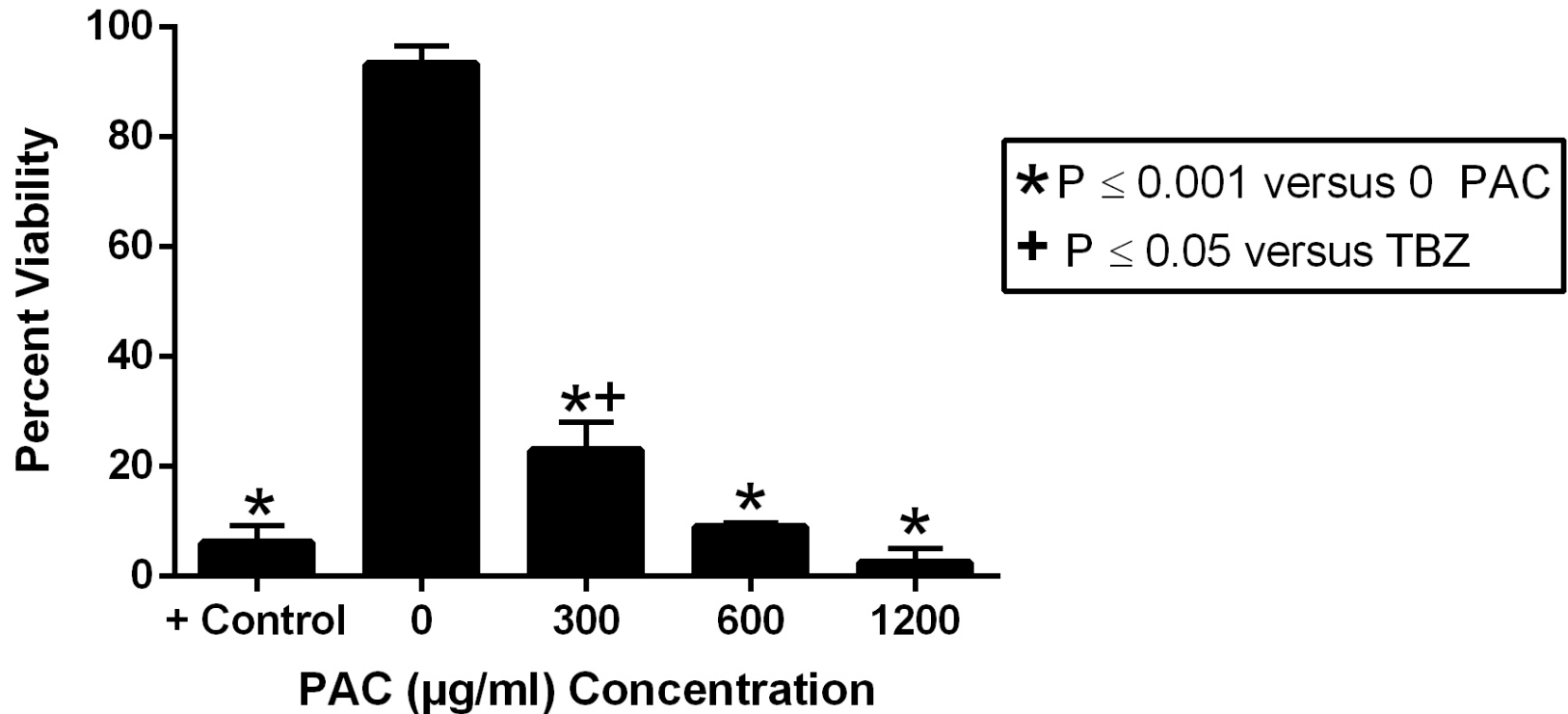


<http://viewfromthe14thfloor.com/?p=967>

# Studies to test anthelmintic efficacy of cranberry leaf extract (PAC) and powder

- Anthelmintic efficacy testing of PAC on
  - adult worms *in vitro*
  - L1/L2 larvae *in vitro*
  - larval development *ex vivo*
- Anthelmintic efficacy of cranberry leaf powder on eggs *in vivo*

# Effect of Cranberry PAC on Adult *H. contortus*





# Effect of cranberry leaf powder on *H. contortus* fecal egg count reduction

- Two groups of 9 lambs were infected with *H. contortus* L3 larvae.
- One group was orally drenched with 26 grams of cranberry leaf powder for 3 days and control group not drenched.
- Fecal egg counts were processed weekly.

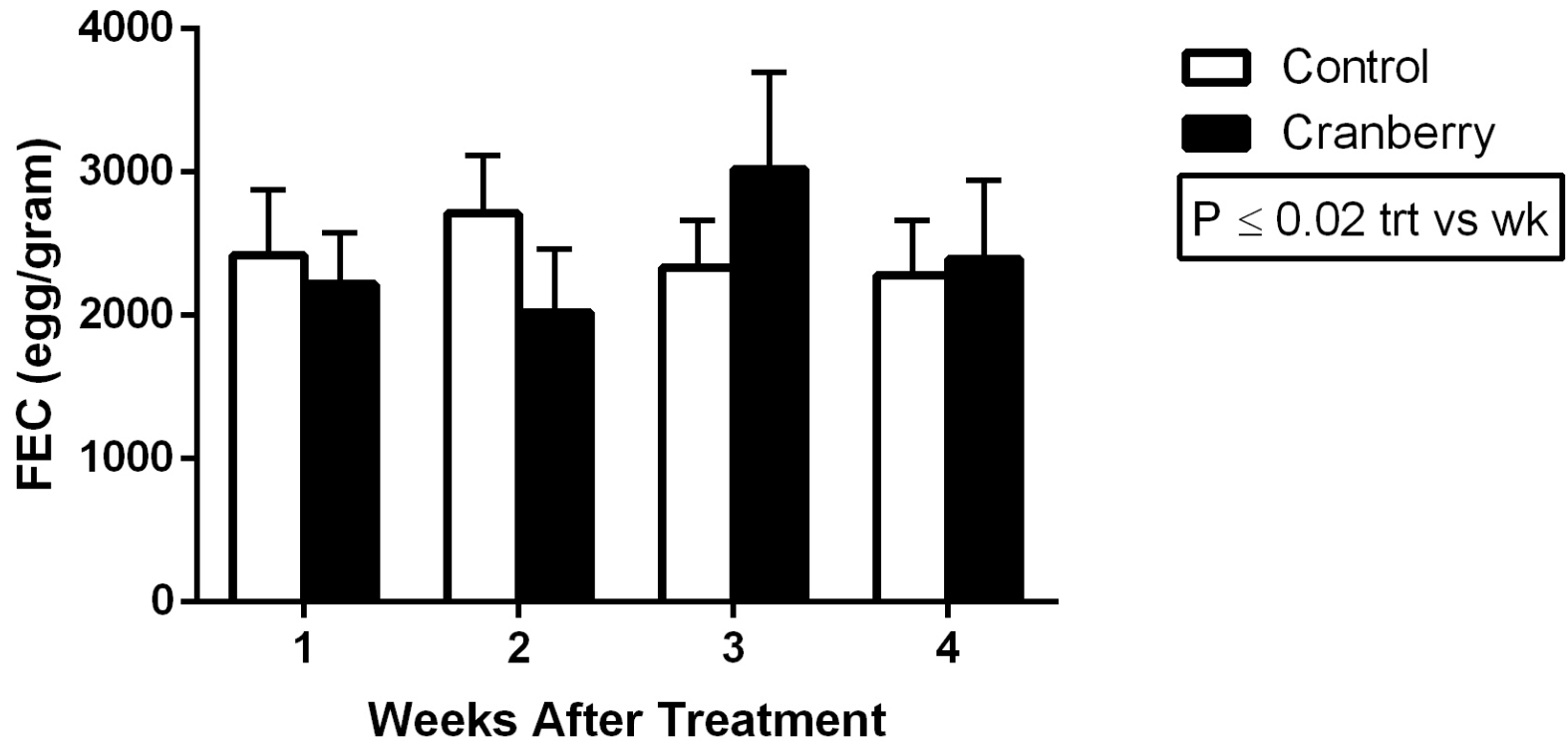


Photographer: E. Lamperelli



Photographer: C. Barone

# Effect of cranberry leaf powder on *H. contortus* fecal egg count reduction



## Conclusions

- Cranberry leaf powder PAC exhibited anthelmintic activity against larval and adult *H. contortus*
- Cranberry leaf powder reduced fecal egg counts for two weeks after treatment
- Next step - Recently funded NESARE graduate student grant will examine anthelmintic effect of varying concentrations of cranberry leaf powder incorporated into a supplemental pellet.

USDA OREI

Forage-based Parasite Control in Sheep and  
Goats in the Northeast U.S.

West Virginia University  
Cornell University  
University of Rhode Island  
University of Wisconsin  
Virginia Tech

# Project Objectives

- Evaluation of birdsfoot trefoil (BFT) cultivars – Analysis of the condensed tannin profiles
- Assess the anthelmintic effect of BFT cultivars
- Assess the effect of BFT on immune function
- Evaluate herd health and economic outcomes of BFT pasture mixes for GIN suppression

# Condensed Tannin Analysis of Several Varieties of Birdsfoot Trefoil

	DMAC PAC A2 dimer standard (mg/g)	DMAC PAC Cranberry PAC standard (mg/g)
Empire BFT	1.5	5.3
Bull BFT	1.4	4.8
NY BFT	1.8	6.1
Bruce BFT	12.0	40.9
Norcen BFT	ND	ND
Pardee BFT	3.9	13.2
Leo BFT	2.3	7.7

# On-Farm BFT Studies

- Coordinate on-farm studies with participating farmers who will investigate how to best utilize BFT in the field.
- Are there practical ways to incorporate BFT into grazing systems and control parasites?
  - Variety differences in terms of effectiveness and suitability?
  - Amount needed? Sustainability?

A photograph of a herd of sheep in a green field. The sheep are of various colors, including white, brown, and black. They are scattered across the field, some standing and some lying down. In the background, there is a dense line of trees with green and some autumn-colored foliage. The sky is clear and blue. The word "QUESTIONS?" is overlaid in large, bold, yellow letters in the center of the image.

**QUESTIONS?**

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