

# Frantzen Farm

## New Hampton, IA







**PRACTICAL  
FARMERS  
OF IOWA**



**ON-FARM  
RESEARCH**

# What are we trying to achieve?

- OUR GOAL IS TO IDENTIFY AND HOPEFULLY ADDRESS BARRIERS TO THE VIABILITY OF NICHE MARKET PORK PRODUCTION.



# Apple Cider Vinegar Supplementation in Feeder Pigs



## Livestock Research



## Apple Cider Vinegar Supplementation in Feeder Pigs

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### Cooperators:

- Tom and Irene Frantzen - New Hampton

### Funding By:

The McKnight Foundation

### Web Link:

[http://bit.ly/pfi\\_livestock](http://bit.ly/pfi_livestock)

### In a Nutshell

- Apple cider vinegar has been long advocated for its health benefits and is gaining recognition as a health supplement for livestock.
- Apple cider vinegar is held to being a health tonic that promotes beneficial gut bacteria, improves digestion of feedstuffs, enhances performance, and helps decrease parasite load.
- Tom Frantzen supplemented three groups of pigs with apple cider vinegar and measured feed intake, average daily gain, feed efficiency and return over feed costs compared to pigs not supplemented.

### Key findings:

- Pigs supplemented with apple cider vinegar were observed to have a sleeker coat, improved vitality and



Two groups of pigs, one supplemented with apple cider vinegar and one not supplemented. The split feeder in the center allowed Tom to conduct the trial. Photo taken November 17, 2015.



APPLE CIDER  
VINEGAR...

5 GALLONS PER TON

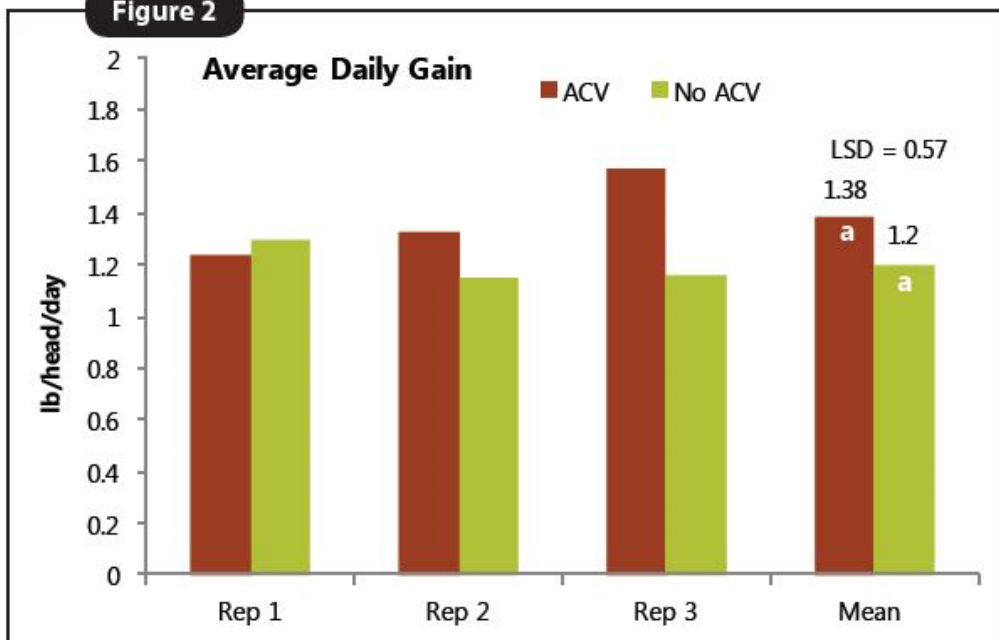
**Figure 2**

Figure 2. Average daily gains for each rep as well as the means for pigs fed apple cider vinegar (ACV) and those not (No ACV). For the mean, columns with same letters are not significantly different at  $P \leq 0.05$ . The least significant difference (LSD) is indicated above the mean column.

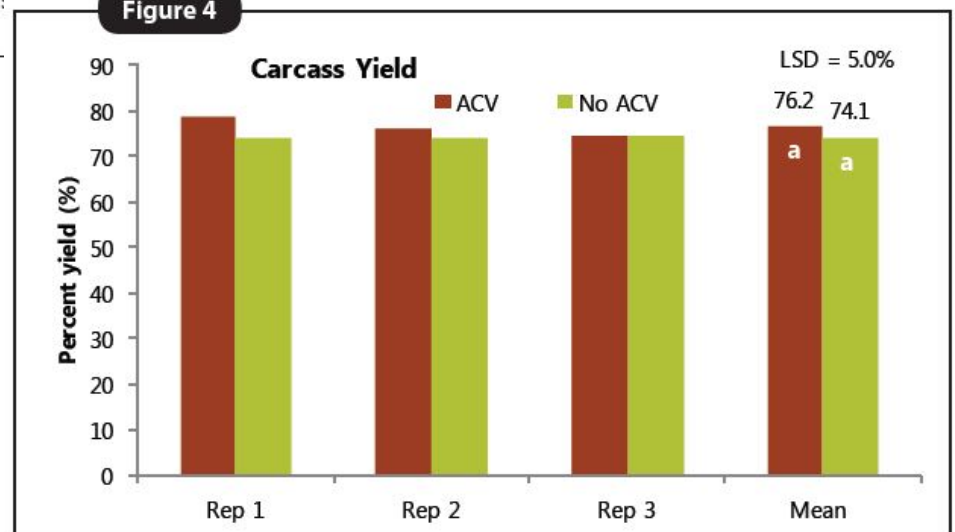
**Figure 4**

Figure 4. Carcass yields for each rep as well as for pigs fed apple cider vinegar (ACV) and those not (No ACV). For the mean, columns with same letters are not significantly different at  $P \leq 0.05$ . The least significant difference (LSD) is indicated above the mean column.

**Table 3**

**Costs and profits incurred from pigs supplemented with apple cider vinegar (ACV) and those that were not supplemented with apple cider vinegar (no ACV).**

	Rep 1		Rep 2		Rep 3		Mean	
Treatment	ACV	No ACV	ACV	No ACV	ACV	No ACV	ACV	No ACV
Carcass price (\$/lb)	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00
Carcass weight (lb/hd)	173.00	177.40	179.07	155.99	187.69	165.42	179.92	166.27
Carcass value (\$/hd)	\$346.00	\$354.80	\$358.14	\$311.98	\$375.38	\$330.84	\$359.84	\$332.57
Total feed intake (lb/hd)	637	741	679	607	671	585	662	644
Total feed costs (\$/hd)	\$168.17	\$184.51	\$179.26	\$151.14	\$177.14	\$145.67	\$174.76	\$160.36
Net returns (\$/hd)	\$177.83	\$170.29	\$178.88	\$160.84	\$198.24	\$185.17	\$185.08	\$172.21

ACV pigs netted \$12.87 more per head than No ACV pigs.



# Apple Cider Vinegar

## Key findings:

- Pigs supplemented with apple cider vinegar were observed to have a sleeker coat, improved vitality and looked healthier than those not receiving apple cider vinegar.
- Pigs supplemented with apple cider vinegar tended towards increased feed intake and average daily gains, higher carcass yields, better feed efficiency, and higher profits.

Project Timeline:

September 2014 – November 2015

“The results indicate that ACV improves pig performance and this is something that merits further investigation, by other farmers and by industry.” - Tom Frantzen

“Every time we sorted pigs, I could see a difference in size and could pull out vinegar pigs right away from their looks.” - Irene Frantzen

“After feeding ACV in three repetitions, I saw improved pig vitality. Vinegar pigs were more vigorous.” - Tom Frantzen

# Pelleted Small Grains Fed to Pigs

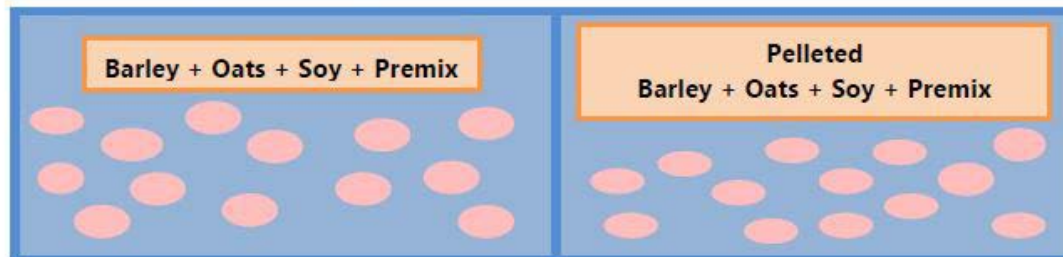
**Objective:** To measure if feed efficiency of a small grain (high-fiber) based diet increases when pelleted



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**Project Period**

April – August 2017; from weaning to finish.



# Methods

- Split litters into two groups, take weights monthly
- Color code ear tags identify each pig !
- Feed one group mash and one group pellets
- Keep records of ration composition, nutritional analysis and costs
- Collect carcass information





## **SPLIT FEEDER**

WHEN WE DO REPLICATED TRIALS  
WE ROTATE THE 'TREATED' SIDE TO  
EVEN OUT "BACKGROUND NOISE".



## **PFI PURCHASED A SCALE**

WITH THIS SCALE WE CAN OBSERVE THE  
INDIVIDUAL PERFORMANCE OF THE EAR  
TAGGED PIGS IN THE FEEDING TRIAL.



**PFI TRIAL – WEIGHING & RECORDING**  
WE GENERATE INDIVIDUAL ANIMAL  
PERFORMANCE WITH PERIODIC WEIGHING.





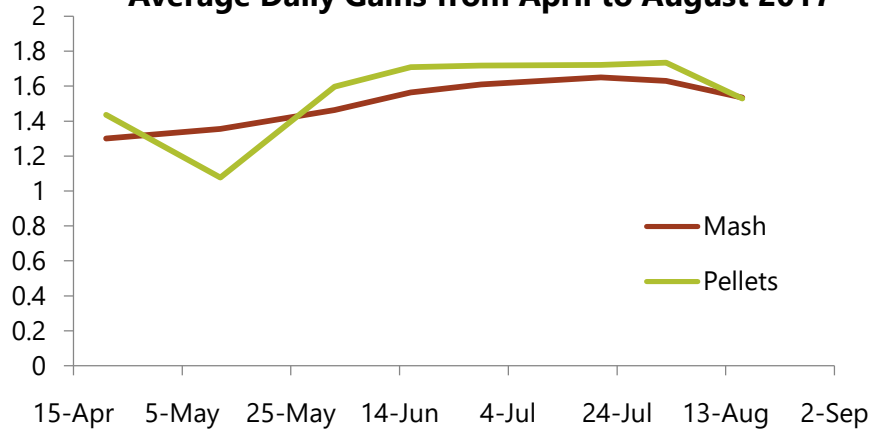
**FEED SAMPLES ARE  
ANALYZED.**

# **HIGH FIBER DIETS ARE RESEARCHED.**



# Results

**Average Daily Gains from April to August 2017**

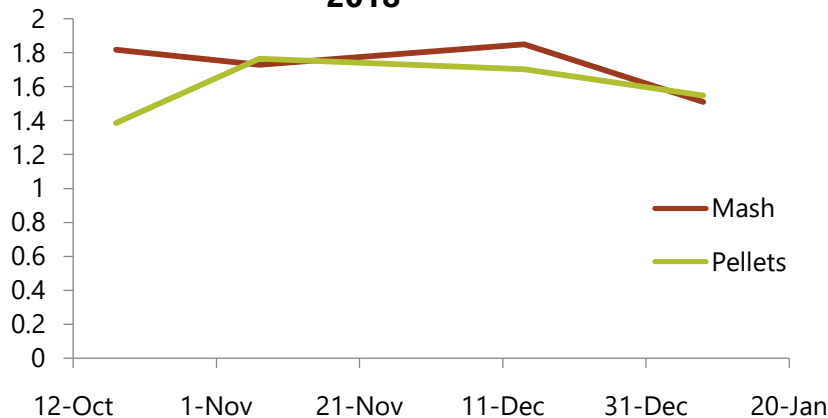


Round 1 Average Daily Gains:

Mash – 1.54

Pellets – 1.53

**Average Daily Gains from Oct. 2017 to Jan. 2018**



Round 2 Average Daily Gains:

Mash – 1.51

Pellets – 1.55





**2<sup>ND</sup> LOCATION SPLIT FEEDER TRIAL**



# Next Steps...



# 2018 AND 2019 RESEARCH

- FOCUS #1 : REPLACING SOME OF THE CORN IN GROW FINISH DIETS WITH HYBRID RYE. THREE ROUNDS OF COMPARISONS.
- FOCUS #2 : COMPARING THE EFFECT OF HIGH TEMPERATURE PELLETING OF THE RYE REPLACEMENT DIET TO NOT PELLETTED.