



A comparison of Rye and Barley in Prince Edward Island Pig diets

Background

Barley is the traditional energy source for feeding pigs on Prince Edward Island. Often grown as a crop in a rotation with potatoes, barley provides a marketable crop that covers some of the costs associated with maintaining a crop rotation.

An alternative crop to barley may be fall rye. Rye offers several advantages over other cereal crops:

- Rye is the most winter hardy cereal.
- Rye can be successfully established later in the autumn than winter wheat.
- Rye provides a living ground cover that reduces the potential for nutrient loss and soil erosion.
- Winter cereals can reduce the pressure of spring work requirements.

Fall rye is not a traditional feed grain or energy source for pigs; concerns about potential ergot levels in rye have also made feeders dubious about including rye in pig rations. Therefore, production, of fall rye has been limited due to lack of potential markets.

Some earlier work by Dr. Ted Van Lunen, from Agriculture and Agri-food Canada indicated that the digestibility of rye could be quite good, so we proposed that a ration utilizing rye in the place of barley be fed to measure the performance of PEI pigs with PEI rye and PEI barley.

Diets

The following rations were fed to 200 pigs in pens of 25.

Grower

	Rye	Barley
Barley	0	531.5
Rye	531.5	0
Wheat	150	150
Soybeans	290	290
Lysine	0	0
Vitamin premix	28.5	28.5
Total	1000 kg	1000 kg

Finisher

	Rye	Barley
Barley	0	734.5
Rye	734.5	0
Wheat	0	0
Soybeans	237	237
Lysine	0	0
Vitamin premix	28.5	28.5
Total	1000 kg	1000 kg

Because this study was part of another one, there were 75 gilts and 25 barrows on the Rye ration, and 25 gilts and 75 barrows on the comparable barley ration.

Results

The averages of the trials are as follows:

	Rye	Barley
Growth g/day	879	887
days	96.7	95.8
Index	110.6	109.7
Feed Conversion	3.04	3.16
Lean yield	60.6 %	59.4%
Loin depth	58.3mm	58.5mm
Backfat	18.4mm	19.3mm
Light Reflectance	48.4 %	49.6 %
Marbling	2.2	2.3
Fat firmness	1.9	1.9
Death rate	1 %	3 %
Treatment rate	6 %	1 %
Pneumonia prevalence	72 %	76 %
Adhesion Prevalence	6.9 %	3.4 %
Roundworm prevalence	0 %	0 %

When we remove the effect of gender we could not find a difference between pigs fed barley or rye as a carbohydrate source.

Conclusion

The use of rye was not found to be detrimental for either growth or efficiency in this trial, nor was a problem found with pork quality. Rye made a suitable choice for feeding pigs in this study. As these were experimental diets individual results may vary; the use rye could be considered at lower inclusion rates for use in pig diets.

There could be environmental and production advantages to the use of rye as a feed ingredient for Prince Edward Island pork production.

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