



Annual Report



2006

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BOARD OF DIRECTORS 2006

Chair	Lloyd Evans, Nova Scotia
Director	John Hutten, Nova Scotia
Director	Alex Barczyk, New Brunswick
Director	Tony Vandebrand, New Brunswick
Director	Dr. Trevor Lank, PEI
Director	Reg MacDonald, PEI
Secretary-Treasurer	Janice Murphy, ASRP Staff

Ex-Officio:

Robert Harding, PEI Pork
Shelly Higgins, Porc NB Pork
Henry Vissers, Pork Nova Scotia
Dr. David Burton, Nova Scotia Agricultural College
Dr. Robert Gordon, Nova Scotia Agricultural College
Dr. Daniel Hurnik, Chief Executive Officer
Industry Chair for Swine Research
Atlantic Veterinary College

AUDITORS' REPORT



Beaton Fitzpatrick Murray
Chartered Accountants and Advisors

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AUDITORS' REPORT

To the Members of Atlantic Swine Research Partnership Inc.

We have audited the statement of financial position of Atlantic Swine Research Partnership Inc. as at December 31, 2006 and the statements of operations and changes in net assets and cash flows for the year then ended. These financial statements are the responsibility of the organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the organization as at December 31, 2006 and the results of its operations and the changes in its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

A handwritten signature in cursive script that reads 'Beaton Fitzpatrick Murray'.

Chartered Accountants

Charlottetown, P.E.I.
March 27, 2007

ATLANTIC SWINE RESEARCH PARTNERSHIP INC.

Statement of Financial Position

December 31, 2006, with comparative figures for 2005

	2006	2005
Assets		
Current assets:		
Cash	\$ 98,063	\$ 153,575
Accounts receivable (note 2)	207,586	99,691
Inventories (note 3)	87,500	62,400
Prepaid expenses	14,765	1,217
	<u>\$ 407,914</u>	<u>\$ 316,883</u>

Liabilities and Net Assets

Current liabilities:		
Bank indebtedness (note 4)	\$ 59,700	\$ -
Accounts payable and accrued liabilities	174,188	115,958
Deferred revenue (note 5)	129,347	147,709
	<u>363,235</u>	<u>263,667</u>
Long-term debt (note 6)	44,679	53,216
Prior period adjustment (note 8)		
	<u>\$ 407,914</u>	<u>\$ 316,883</u>

See accompanying notes to financial statements.

On Behalf of the Board:

_____ Director

_____ Director

ATLANTIC SWINE RESEARCH PARTNERSHIP INC.

Statement of Operations and Changes in Net Assets

Year ended December 31, 2006, with comparative figures for 257-day period ended December 31, 2005

	2006	2005
Revenue:		
Swine chair funding (note 7)	\$ 121,461	\$ 64,622
Research project funding	479,466	231,048
Interest and other income	14,309	-
	615,236	295,670
Expenses:		
Bad debts	-	(3,000)
Insurance	48	145
Interest and bank charges	1,200	498
Office	8,168	5,195
Professional fees	7,850	2,898
Research project expenses	509,447	250,295
Supplies	1,444	89
Swine barn (page 8)	36,502	28,490
Telephone	8,053	3,236
Travel	20,277	4,390
Wages	22,247	3,434
	615,236	295,670
Excess revenues over expenses	-	-
Net assets, beginning of year, period	-	-
Net assets, end of year, period	\$ -	\$ -

See accompanying notes to financial statements.

ATLANTIC SWINE RESEARCH PARTNERSHIP INC.

Statement of Cash Flows

Year ended December 31, 2006, with comparative figures for 257-day period ended December 31, 2005

	2006	2005
Cash flows from operating activities:		
Cash receipts from customers and funding agencies	\$ 762,654	\$ 576,781
Cash paid to suppliers and employees	(866,007)	(469,786)
Interest paid	(6,570)	(2,314)
Interest received	3,248	-
	(106,675)	104,681
Cash flows from financing activities:		
Repayments on long-term borrowings	(8,537)	(11,069)
Net increase (decrease) in cash	(115,212)	93,612
Cash, beginning of year, period	153,575	59,963
Cash, end of year, period	\$ 38,363	\$ 153,575
Represented by:		
Cash	98,063	153,575
Bank loan	(59,700)	-
	\$ 38,363	\$ 153,575

See accompanying notes to financial statements.

ATLANTIC SWINE RESEARCH PARTNERSHIP INC.

Notes to Financial Statements

Year ended December 31, 2006

The Atlantic Swine Research Partnership Inc. is a not-for-profit scientific research corporation incorporated without share capital under the Canada Business Corporations Act. The organization's principal activity is to conduct strategic scientific research activities for the development of the Atlantic Canada Swine Industry. The organization is a not-for-profit organization under the Income Tax Act and accordingly is exempt from income taxes provided certain requirements of the Income Tax Act are met.

1. Significant accounting policies:

(a) Revenue recognition:

The organization follows the deferral method of accounting for contributions which include government grants.

Operating profits are recorded as revenue in the period to which they relate. Grants approved but not received at the end of an accounting period are accrued. Where a portion of a grant relates to a future period, it is deferred and recognized as revenue in the subsequent period.

Unrestricted contributions are recognized as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

Externally restricted contributions are recognized as revenue in the year in which the related expenses are recognized.

(b) Inventories:

Inventory of animals is valued at the lower of cost and net realizable value based on the approximate weight of animals times the market price at December 31, 2006. Feed inventory is calculated at actual cost. Cost is determined using the first-in, first-out method.

(c) Capital assets:

Capital asset additions are expensed in the period of acquisition.

(d) Financial instruments:

The organization's financial instruments consist of cash, accounts receivable, accounts payable and accrued liabilities, deferred revenue and long-term debt. Unless otherwise noted, it is management's opinion that the organization is not exposed to significant interest, currency or credit risks arising from these financial instruments. The fair values of these financial instruments approximate their carrying values, unless otherwise noted.

ATLANTIC SWINE RESEARCH PARTNERSHIP INC.

Notes to Financial Statements

Year ended December 31, 2006

1. Significant accounting policies (continued):

(e) Use of estimates:

The preparation of financial statements in accordance with Canadian generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenditures during the reporting period. Actual results could differ from management's best estimates as additional information becomes available in the future.

2. Accounts receivable:

	2006	2005
Trade	\$ 202,762	\$ 99,053
G.S.T.	4,824	638
	\$ 207,586	\$ 99,691

3. Inventories:

	2006	2005
Animals	\$ 82,000	\$ 62,400
Feed	5,500	-
	\$ 87,500	\$ 62,400

4. Bank indebtedness:

Bank indebtedness includes a demand operating loan in the amount of \$ 59,700, which is available to a maximum of \$ 60,000, and bears interest at bank's prime. This loan is secured by a Guaranteed Investment Certificate.

ATLANTIC SWINE RESEARCH PARTNERSHIP INC.

Notes to Financial Statements

Year ended December 31, 2006

5. Deferred revenue:

	2006	2005
Green house gas	\$ -	\$ 28,735
Minimal disease	4,900	-
Other swine chair	55,826	36,737
Sow survey	31,121	31,121
Swine chair general	37,500	37,500
Value added	-	13,616
Balance, end of year, period	\$ 129,347	\$ 147,709

6. Long-term debt:

	2006	2005
PEI Lending Agency promissory note, simple interest charged monthly at prime (presently at 6%), repayments based on a levy per hog sold to Garden Province Meats Inc. on an annual basis, due September 2008, secured by an assignment of fire insurance and all perils insurance and the inventory. The amount of the levy per hog is based on the market price per kilogram according to the following schedule:		
Repayment per hog		Price per kilogram
\$ Nil.		Less than \$ 1.60
\$ 5.		\$ 1.60 to \$ 1.70
\$ 10.		\$ 1.71 to \$ 1.75
\$ 15.		\$ 1.76 to \$ 1.80
\$ 20.		More than \$ 1.80
	\$ 44,679	\$ 53,216
	\$ 44,679	\$ 53,216

The aggregate maturities of long-term debt for each of the five years subsequent to December 31, 2006 are not determinable and therefore have not been disclosed.

ATLANTIC SWINE RESEARCH PARTNERSHIP INC.

Notes to Financial Statements

Year ended December 31, 2006

7. Swine chair funding:

	2006	2005
PEI Department of Agriculture	\$ 65,550	\$ 45,505
PEI Hog Commodity Marketing Board	25,000	17,500
Porc N.B. Pork	25,000	17,500
Pork Nova Scotia	25,000	17,500
Less amount of deferred revenue	(19,089)	(33,383)
	\$ 121,461	\$ 64,622

8. Prior period adjustment:

Interest on long-term debt on the Schedule of Swine Barn Revenue and Expenses in fiscal 2005 has been reduced by \$ 6,199. to reflect an overstatement of interest expense.

Deferred revenue as of December 31, 2005 has been increased by \$ 6,199. to reflect the above noted adjustment.

9. Related party transactions:

Included in swine chair revenue is \$ 75,000. (2005 - \$ 52,500.) representing grants from the Maritime Provincial Hog Boards, which are members of Atlantic Swine Research Partnership Inc. As at December 31, 2006, the organization had \$ 25,569. in trade receivables from one of the Boards.

ATLANTIC SWINE RESEARCH PARTNERSHIP INC.

Schedule of Swine Barn Revenue and Expenses

Year ended December 31, 2006, with comparative figures for 257-day period ended December 31, 2005

	2006	2005
Revenue:		
Swine sales	\$ 268,983	\$ 255,076
Grants received	7,940	-
	<u>276,923</u>	<u>255,076</u>
Cost of goods sold:		
Beginning inventory - animals and feed	62,400	102,484
Purchases - animals	97,412	82,768
Purchases - feed	175,440	111,291
Direct labour	27,371	25,819
Direct overhead	38,302	23,604
	<u>400,925</u>	<u>345,966</u>
Ending inventory - animals and feed	(87,500)	(62,400)
	<u>313,425</u>	<u>283,566</u>
Gross loss	(36,502)	(28,490)
Expenses:		
Insurance	531	261
Interest on long-term debt	5,370	1,817
Levies	3,571	3,141
Office	735	344
Professional fees	1,000	78
Repairs and maintenance	5,516	7,443
Supplies	14,206	8,441
Travel	919	180
Utilities	3,872	1,899
Dues and subscriptions	225	-
Freight	312	-
Rental	825	-
Interest charges - suppliers	1,220	-
	<u>38,302</u>	<u>23,604</u>
Less allocation to direct overhead	(38,302)	(23,604)
	-	-
Net loss	\$ (36,502)	\$ (28,490)

CURRENT ASRP PROJECTS UPDATE

Disease Resistance Assay	ASRP has been working with a local breeding company and Pharmagap Inc. in Ottawa to develop a method to detect pigs with a stronger immune capacity. It appears that the test may function quite well and we now need to test some breeding stock over several generations. There has been significant interest from other breeders and what we are seeing is that immunity of a pig could be influenced by its sire.
Feeding Strategies To Increase Omega-3 Fatty Acid Content Of Pork Using Linogen™ PS	Based on research already completed, a more detailed matrix study is needed to determine optimal feeding level. A follow-up study is currently underway to look at different rates of the additive Linogen™ PS rich in omega fatty acids to determine if they can raise the levels of omega fatty acids in pork without adversely affecting the taste and quality attributes of pork, and to determine the content of omega-3 in the primal cuts from these pigs.
Antibiotic Alternative Projects	Producers have asked us to continue to look at alternatives to antimicrobials in swine. Most of our work has focused on immunostimulants, with the most notable being Yeast Beta Glucan (YBG) which is a purified yeast extract produced by Progressive Bioactives (www.progressivebioactives.com). We've reported some scientific results earlier, and have ongoing field trials. An earlier (2003) pilot project with a compound called OxBC had some promising results in weaned pigs, and the company who owns the product, Chemaphor, (www.chemaphor.com) is planning more work in this field. If producers have suggestions to evaluate other compounds, ASRP is open to that. A possible future project is food grade Hydrogen Peroxide to disinfect water lines.
Sow Productivity Survey	ASRP is planning to look at sow productivity factors in the Maritimes. In a world of competitive pricing, we need to continue to monitor and shoot for optimal productivity.

If any producers have research ideas that they would like to put forward either talk to your ASRP representative, or e-mail me at hurnik@upei.ca.

Thank you,
Daniel Hurnik



MARITIME PORK VALUE CHAIN ASSESSMENT FINAL REPORT

Prepared for: PEI ADAPT Council

Prepared by: Atlantic Swine Research Partnership Inc. and PEI Pork Plus Inc.

November 16, 2006

EXECUTIVE SUMMARY

The Future of Animal Agriculture in North America

Source: The Future of Animal Agriculture in North America

<http://www.farmfoundation.org/projects/04-32ReportTranslations.htm>

- Marketing contracts increasingly replace open markets and relationships among the stakeholders in livestock production. Concerns noted are that marketing agreements, contracts and similar business arrangements are more conducive to larger operations and reduce the availability of market information needed for efficient price discovery.
- The trend to fewer and larger livestock is expected to continue. The economies of scale in production and processing are significant and will drive the design of new and existing facilities.
- Livestock and poultry production and processing are increasingly mobile. The livestock production/distribution industries are continuing to be global in their production and trade activities. Multinational livestock firms may dominate world production and processing and will source and sell products globally.
- Small to mid-size producers face serious survival challenges in determining how they can successfully fit into integrated supply-chain structures. Higher revenue may be possible in value-added niche markets where consumers pay high enough premiums for differentiated products to offset the increased cost of producing, processing and distributing in small quantities, alternatively small and mid-size producers may be able to capture the market access and cost advantages of larger producers by joining a network or alliance that acts like a large producer. Both these options require a high level of cooperation and interdependence among producers.
- Producers can not be expected to invest in production if access is not assured to processing plants that can pay competitively for products. .
- Income is projected to continue to rise in all three North American countries, and globally. The faster growth of income in developing countries worldwide will lead to continued growth in demand for animal source foods. Rising levels of income, changing lifestyles, urbanization and other demographic changes have contributed to increased consumption of prepared foods and increased consumption of food away from home.

- Consumers have diverse preferences. Many consumers, particularly the more affluent, are demanding novel food attributes above and beyond food safety. These attributes may include animal welfare, organic, social responsibility, environmental responsibility, locally produced, and no use of antibiotics, synthetic growth hormones, or genetically modified ingredients.
- Wal-Mart and other very large, retailers are having a significant effect on retailing. In some markets, the presence of large merchandisers can coexist with smaller, niche segments. Internet shopping may allow consumers access to specialty markets and products, but, to date, consumers prefer to shop in-store locations.
- Future growth potential for North American animal product in value-added, branded, packaged products is important. To enhance the competitiveness of the products, government regulators and trade negotiators need to work closely with the food manufacturing and food service industries to assure a sound policy and regulatory framework to support future trade growth.

Canadian Export Markets

- Canada's top ten markets for January-November 2005 were: United States, Japan, Australia, Korea, Mexico, Romania, China, Russia, Taiwan, and New Zealand. Other than issues with Australia and Romania, there have been very few technical issues of concern with any of the other top ten markets over the past year.
- Several countries have import restrictions based on medication/health status that make it difficult for Canadian processors to enter the market. For example:

Country	Import Restriction
EU	Antibiotic Growth Promoters Beta Agonists - Paylean®
India	Ruminant by-products
Singapore	Beta Agonists - Paylean® Edible Residual Material (ERM)
New Zealand	PRRS

Consumer Concerns

Source: Executive Summary - 2002 Ipsos Reid Survey

- Consumer's main concern with pork is food safety, particularly with the use of antibiotics and hormones in production. Environment and animal care are the next two areas of concern.
- Consumers indicate that farmers and industry professionals are the most credible sources of information regarding pork production; even more significantly consumers are not

interested in learning more. Consumers would like to trust industry to make sure their concerns are met. This creates clear branding and differentiation propositions.

Long Term Canadian Pricing Trends

The largest problem facing producers participating in the commodity pork market is that there is a common North American price. The price received directly by PEI producers is taken from 5 key Mid-west markets; the underlying dilemma for Canadian producers is that the Canada/US exchange rate has reduced the value of Canadian pigs commensurate with the exchange rate. Below is a summary of pricing mechanisms for pork in Canada.

Exchange Rate Effects

Year	Actual Price Received	Potential Price Received if Exchange Rate was Locked at 2000 Levels
2006 (May)	1.1702	1.4844
2005	1.4521	1.7761
2004	1.6629	1.8931
2003	1.3787	1.4662
2002	1.3985	1.3183
2001	1.7668	1.6826
2000	1.6366	1.6366

It's academic whether the low dollar or high dollar is the actual value; what is clear is that at the current value, commodity production in Canada will undergo significant structural change before it becomes sustainable. A key question is whether a commodity priced industry will remain in the Maritimes. The signs of financial hurt are already broadly evident in the Canadian industry.

For the Maritimes to continue to produce market pigs in a commodity business model is probably unsustainable; a radical shift in business model is required.

The Canadian Food Inspection Agency, who is responsible for plant inspection and label approval, has recently agreed to allow descriptions of special and auditable methods of production printed on meat and poultry labels.

Natural/Organic Food Market

WHOLE FOODS INC.

Source: <http://www.wholefoodsmarket.com/company/index.html>

Founded in 1980 as one small store in Austin, Texas, Whole Foods Market® is now the world's leading retailer of natural and organic foods, with 184 stores in North America and the United Kingdom. To date Whole Foods Market remains uniquely mission driven: We're highly selective about what we sell, dedicated to stringent Quality Standards, and committed to sustainable agriculture.



Value Added Options for Fresh PEI Pork

Source: Natural & Organic Marketing Group, Inc.
633 St-Joseph Est, Suite 400, Québec, Québec G1K 3C1
Tel : (418) 529-9191 Fax : (418) 529-9123

Approximate values for value added pork (Summer 2005):

Kill Location	Market	Differentiation Points	Farm Cost/Hog	Processing Cost	Sales/Hog
Local	Domestic Commodity	-	Market Price		
Local	Domestic Commodity	-	\$167	\$48	\$207.93
Local	Export Commodity (ASIA Full Set)	-	\$167	\$48	\$224.56
Local	Niche	Soybean/Flax as ingredient	\$173	\$48	\$231.74
Local	Niche	Natural No Antibiotics	\$180	\$48	\$239.99
Local	Niche	Organic	\$310	\$48	\$379.18

Acknowledgements

This report was a collaborative effort. We would like to acknowledge the following individuals and organizations that have made a significant contribution to this important project for the Maritime pork industry.

- Prince Edward Island ADAPT Council
- Agriculture and Agri-Food Canada
- PEI Pork Plus Inc.
- Beaton Fitzpatrick Murray
- Ontario Pork
- Robert Harding, PEI Pork
- Eddie Curran, Prince Edward Island Business Development Inc.
- Stephanie Laybolt, Janice Murphy, and Daniel Hurnik, ASRP Inc.

The work of independent consultants was also instrumental in bringing together the information necessary to fully assess the potential for new market opportunities for the Maritime pork industry. These individuals have been identified throughout the report in connection with the specific components that they contributed to the project. Without their efforts, this report and its conclusions would not have been possible.

LOW vs. HIGH CRUDE PROTEIN DIETS IN FINISHING PIGS

Pigs need to consume protein in order to create muscle and lean yield for which producers get paid. Dietary protein needs are directly proportional to the pigs lean deposition rate; and since we've selected for leaner and faster growing pigs their daily protein needs have gone up. We can't finish today's pigs on yesterday's diets very well. It's a bit simplistic to talk about protein content because it's only as good as the amino acid profile it contains. Pigs need amino acids to make muscle, and not all protein sources have the right mixture of amino acids. To compensate for shortages in some amino acids we have tended to overfeed overall protein content to avoid a shortage of specific amino acids.

Overfeeding protein works when feed is cheap or pig prices are high but unused protein does have consequences above just feed cost. Excess protein is digested by the body and eliminated mostly in the form of ammonia. Ammonia is an important contributor to air pollution both inside and outside the barn.

At the Atlantic Swine Research Partnership Research Barn we did a quick pilot study where we fed two diets both formulated to meet the protein needs of finishing pigs - one was a conventional diet, the second used synthetic amino acids to minimize the amount of crude protein, but not limit any amino acids. We fed the diets from 72 kg to market weight and measured the animal performance and carcass composition. The results are outlined below:

Diet Specifications	(70 kg to market)	
Assumed Growth Rate	0.904 kg/d	
Assumed Feed Intake	2.75 kg/d	
Assumed Feed:Gain	3.03 kg/d	
DE	3420 kcal/kg	
T Lysine	0.83 %	
D Lysine	0.73 %	
T Lysine : DE	2.43 g/Mcal	
Added Salt	0.35 %	

Results	Low Crude Protein	High Crude Protein
Protein Content	12%	17%
Cost (Dec 2004)	\$236.00	\$233.60
N	23	23
Start weight	72.9 kg	72.7 kg
End weight	116.8 kg	113.9 kg
ADG	0.891 kg/d	0.835 kg/d
ADFI	2.13kg/d	2.08kg/d
Feed Conversion	2.79	2.94
Lean Yield	60.31 mm	60.16 mm
Backfat	19.36 mm	19.50 mm
Loin depth	61.56 mm	59.92 mm

The results show, that although the numbers in this pilot study are low, the pigs on the low protein diets performed as well or better than the conventional diets while the diet costs may not be very different.

FEEDING STRATEGIES TO INCREASE THE OMEGA-3 FATTY ACID CONTENT OF PORK USING LINOGEN™ PS

A study was performed to evaluate an additive rich in omega-3 fatty acids to determine if it can raise the levels of omega-3 fatty acids in pork without adversely affecting the taste and quality attributes of pork.

Background

The response of pig adipose tissue to dietary fatty acids is dependent upon the fatty acid profile of the diet. Dietary levels of essential fatty acids will have a large effect on the levels of the corresponding fatty acids in adipose tissue, since the dietary fatty acids replace the de novo synthesis of other fatty acids. This is particularly true for the essential fatty acids linoleic and linolenic acid. For example, one researcher fed pigs diets containing either 5 percent tallow or 5 percent soya oil to produce diets with large differences in fatty acid profile. The adipose tissue composition of the pigs was affected by diet resulting in significantly higher levels of linoleic and linolenic acid in the adipose tissue of pigs fed the soya oil diet.

An opportunity exists to feed pigs a supplement high in omega-3 fatty acids and have that fat profile in pork products. A flax-based supplement, Linogen™ PS, was fed in an attempt to determine if it will increase the omega-3 fatty acid content of pork.

Materials and Methods

The project was conducted at the ASRP research facility on Union Road, PEI and involved the use of 25 pigs in 1 pen. The pen received the following diet for 30 days prior to slaughter. Linogen™ PS was supplied by Natunola Health, Ottawa, Ontario. The pigs received a conventional commercial diet in their previous growth phases.

Coarse Crush Barley	585 kg
Coarse Crush Corn	250 kg
Soybean meal 48%	100 kg
Linogen™ PS	25 kg
Vitamin mineral premix	40 kg

A sample of pork was taken from each of the four primal cuts (picnic, belly, boneless loin, and ham) and a fatty acid profile was generated by Maxxam Analytics, Mississauga, Ontario. The cuts were trimmed to retail specifications and samples were sent for fatty acid profile. Pork was distributed to a food scientist for an informal sensory analysis.

Results

The pork had increased levels of omega-3 fatty acids in the pork in a ratio proportional to the fat content of the primal cut. Only the belly had levels that could carry an omega-3 claim under current Canadian labeling regulations. There were no problems with pigs eating the

supplemented diets and all pigs were marketed normally. There were no negative attributes to the pork, and it was thought to be suitable for retail markets.

Implications

There were no adverse effects associated with feeding Linogen™ PS to pigs in this study. The pigs ate the diet well. Since this was a pilot study, with no control diets included, no quantitative animal performance data was generated but animals were marketed normally at slaughter weight. The omega-3 content of the pork increased in proportion to the fat content of the cut of pork. At the level fed in this trial, an omega-3 claim would only be possible in one of the primal cuts. At the present time a label claim is allowed if greater than 0.3 g of omega-3 fatty acid is present in a 100 g portion. Only one of the primal cuts exceeded this level because of the higher fat content of this cut. A higher inclusion rate of Linogen™ PS would be required to increase the omega-3 content of the other pork cuts. At this time, a preliminary estimate would suggest that a higher amount of Linogen™ PS or a longer feeding time may be needed to increase the content of omega-3 in the leaner cuts.

Informal sensory analysis indicated no adverse flavours or problems with acceptability of the pork.

Further Research Ongoing

A more detailed matrix study is needed to determine optimal feeding level. To address this need, a follow-up study is currently underway to look at different rates of the additive Linogen™ PS rich in omega fatty acids to determine if they can raise the levels of omega fatty acids in pork without adversely affecting the taste and quality attributes of pork, and to determine the content of omega-3 in the primal cuts from these pigs.

PAYLEAN™ STUDY IN FINISHING PIGS

Paylean™ has been available since the summer with a claim to improve performance of pigs in the finishing phase. The active ingredient is Ractopamine HCl, a repartitioning agent, which works by redirecting energy to muscles to maintain the lean growth of pigs. To realize the effect, adequate nutrition must be available for the pigs to respond to Paylean™. For more details, please contact Elanco Animal Health at www.elanco.com.

This summer, when it became available, we placed 2 pens (50 pigs) on a ration with the 5 g/tonne dosage of Paylean™ and left 2 pens as control on the same diet. We fed a commercial ration and began treatment 4 weeks before barn closeout. All pigs were weighed when we began Paylean™ treatment and again prior to shipping. Carcass data was received from the grading probe, followed by an examination of loins in the cutting room. The results were as shown in the Tables.

Carcass Results

	Paylean	Control
Index	110.75	109.78
Lean yield	60.30	60.12
Back fat	19.71	19.80
Loin depth	62.40	61.68

Pork Quality Results

	Paylean	Control
Reflectance	52.77	48.45
pH	5.81	5.75
Marbling	1.7	2.0
Muscle firmness	2.2	2.2
Fat firmness	2.7	2.0

Growth and Efficiency Results

	Paylean	Control
Start weight	105.29 kg	102.29 kg
End weight	118.61 kg	115.35 kg
Dressed weight	97.73 kg	95.07 kg
ADG	<u>1.087 g/d</u>	0.860 g/d
Dress-out %	82.39 %	82.41 %
Feed conversion	2.96	3.01

It appears, from this study, that the use of Paylean™, did significantly improve growth rate in pigs close to market, and thus may be of benefit in closing out pens and/or barns. There were no statistically significant differences in carcass or pork quality, but with the small sample size, the trends apparent in the data may become significant in a larger study.

In this study Paylean™, when used according to label directions and with a diet that allowed an expression of its effects, appeared to improve growth rate of pigs when shipping to market, and did not have detrimental effects on carcass or pork quality.

MARITIME SHELTERBELT PROGRAM LOOKING FOR ADDITIONAL DEMONSTRATION SITES

The Maritime Shelterbelt Program is aiming to help hog, and other livestock producers to better understand the benefits of planting shelterbelts around livestock barns. Shelterbelts can serve a number of purposes, benefiting producers, their neighbors and the environment.

- Shelterbelt Benefits**
- Reduced energy costs
 - Improved snow distribution
 - Increased crop yields
 - Reduced GHG emissions
 - Increased biodiversity
 - Reduced odour, dust and noise from farm

The Atlantic Swine Research Partnership and the Canadian Pork Council have been working to provide shelterbelt training in the Maritimes. Over the course of the program, a number of workshops have been held instructing participants on all aspects involved in establishing and maintaining shelterbelts. As part of the training, participants have designed six demonstration shelterbelts; two in Nova Scotia, two in New Brunswick and two in Prince Edward Island, with one additional site to be installed at the Atlantic Swine Research Partnership research barn in the spring of 2007. To date over 5500 m of shelterbelt consisting of over 1800 trees have been planted as part of this program.

To facilitate future activities, a plastic mulch applicator, plastic mulch, brush mower and basic soil preparation and tree maintenance equipment have been purchased and are available for use by interested producers and agronomists.

The program is now providing support for establishing shelterbelts throughout the Maritimes. Farmers who are interested in shelterbelts for their farm properties can access funds through the National Farm Stewardship and Greencover Canada Programs, which will provide 50 per cent of the establishment costs up to a maximum of \$10,000. To access funding or to obtain assistance in planning a shelterbelt, please contact Sabrina Ellsworth, at (902) 890-7637.

Trained professionals throughout the Maritimes are available to design and assist with establishing your shelterbelt for FREE

PRINCIPLES OF BIOSECURITY

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General Biosecurity principles depend on the type of disease that is of concern; there are 3 main disease issues.

1. ENDEMIC DISEASE	Present in region/country ie PRRS, Circovirus...	Normal status, generally unregulated
2. FOREIGN ANIMAL DISEASE	a disease with trade implications (FMD)	Agricultural crisis subject to Health of Animals Regulations
3. FOREIGN ZOONOSIS:	a disease that is contagious to people (H5 Influenza, NIPAH virus)	Society crisis subject to H of A, plus Public Health Regulations

There are 3 areas of biosecurity concern around which protocols are built

1. **INSIDE:** inside of buildings, where pigs are is where the infections occur
2. **PERIPHERY:** outside periphery of buildings from where contamination can be accidentally introduced inside to animals
3. **PUBLIC:** public areas and other farms where contamination can originate from



Biosecurity Principles

ENDEMIC DISEASE: each farm can create a protocol specific to its circumstances	
INSIDE	<p>INFECTIOUS DISEASE HAS TO ENTER FROM OUTSIDE BUILDING, THUS PREVENT ENTRY INTO BUILDINGS</p> <ul style="list-style-type: none"> ▪ Only bring in animals or animal products of known health status that will not knowingly introduce new disease ▪ Inside clothing and boots only (assume periphery is contaminated) ▪ Buy clean and/or Wash/disinfect all incoming material ▪ Restrict entry to necessary people only and decontaminate visitors i.e. downtime, shower, hand wash...and log visitors ▪ Prevent bird and rodent entry
PERIPHERY	<p>PREVENT CONTAMINATION OF PERIPHERY</p> <ul style="list-style-type: none"> ▪ Restrict traffic to necessary vehicles and people only...ie signage and locked gates ▪ No pigs from other farms access to periphery ▪ Wash protocol for incoming vehicles, feed or livestock transport, log vehicle movement ▪ People and equipment do not enter animal buildings without decontamination (Outside clothes and boots do not enter barn, inside clothes or clean disposables inside barn) ▪ Effective Rodent/bird control program ▪ If practical, define clean area where uncontaminated vehicles travel and park, and outline a potentially contaminated area where possibly contaminated vehicles travel and establish a traffic flow to minimize cross contamination
PUBLIC	<ul style="list-style-type: none"> ▪ Site farm away from other farms and traffic if possible ▪ Where practical, move animals on routes when there is minimum other livestock traffic ▪ Without an animal health emergency difficult to control public areas

FOREIGN ANIMAL DISEASE	
INSIDE	<p>SAME AS FOR ENDEMIC BUT ALSO</p> <ul style="list-style-type: none"> ▪ No animals into barn, all animal movement stopped either on a voluntary basis or through animal health emergency regulation ▪ Only essential personnel only into buildings ▪ Enhanced decontamination of people and equipment, ie disinfectants approved for FADs and increased downtime ▪ Restriction of other animal species movement if FMD
PERIPHERY	<p>SAME AS FOR ENDEMIC BUT ALSO</p> <ul style="list-style-type: none"> ▪ Mandatory vehicle decontamination between farms ▪ Restricted animal, people and vehicle movement to farm either on a industry voluntary basis or through animal health emergency regulation
PUBLIC	<ul style="list-style-type: none"> ▪ Restricted animal, and/or contaminated vehicle movement on public roads either on a industry voluntary basis or through animal health emergency regulation

FOREIGN ZONOSIS	
INSIDE	<p>SAME AS FOR ENDEMIC and FOREIGN ANIMAL DISEASE BUT ALSO</p> <ul style="list-style-type: none"> ▪ Only absolutely essential personnel only into buildings equipped with contamination suits, respiration masks, and disposable clothing ▪ Decontamination of all equipment and people on site
PERIPHERY	SAME AS FOR ENDEMIC and FOREIGN ANIMAL DISEASE
PUBLIC	<p>SAME AS FOR ENDEMIC and FOREIGN ANIMAL DISEASE</p> <ul style="list-style-type: none"> ▪ but ramped up to include restrictions on people movement in affected region

Survival of Key Swine Pathogens

Agent	Potential Route of Entry	Survival in Environment
<i>Mycoplasma Hyopneumoniae</i>	carrier pig aerosol < 3.2 km	7 days in organic matter (11 days refrigerated)
<i>Actinobacillus Pleuropneumoniae</i>	carrier pig fomite	few days in organic matter
<i>Bordetella Bronchoseptica</i>	carrier pigs, dogs, cats, rodents (less pathogenic)	
<i>Pasteurella Multocida</i>	carrier pigs, humans, cattle, rabbits, dogs cats, rats, poultry, goats sheep (some strains may be non- pathogenic) fomites, aerosols	8 days in water 6 days in liquid manure 49 days in nasal washes
<i>Hemophilus parasuis</i>	carrier pigs	short
<i>Streptococcus suis</i>	carrier pig, sheep, goats, horses, cattle, fomites	25 days @ 9 °C 100 days @ 0 °C
<i>Salmonella sp</i>	carrier pigs (choleraesuis), carrier animals animal protein products, fomites, water	years in manure, 115 days water 120 days in soil
<i>Brachyspora Hyodysenteriae</i>	carrier pigs, rodents, pets fomites	61 days @ 5 °C 7 days @ 25 °C
<i>brachyspiraa pilosicoli</i>	carrier pigs, humans, dogs, birds	
<i>Lawsonia intracellularis</i>	carrier pigs, ?	?
<i>E coli</i>	Carrier pigs, animals fomites,	11 weeks in manure
PRRSV	Carrier pigs, semen, embryos, water., fomites, aerosol	3 weeks in organic matter 11 days in water
PRV	carrier pigs, dogs, racoons, rodents aerosol, flies, water fomites	18 days on steel, manure 2 days, urine 14 days, well water 7 days, flies 7 days
TGE/PRCV	carrier pigs, dogs, cats, foxes, flies, birds fomites	low summer, stable when frozen
Influenza	carrier pigs, birds, humans aerosols	24 - 48 hours
<i>Ascaris suum</i>	carrier pigs, fomites	years

INDUSTRY PARTNERS



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