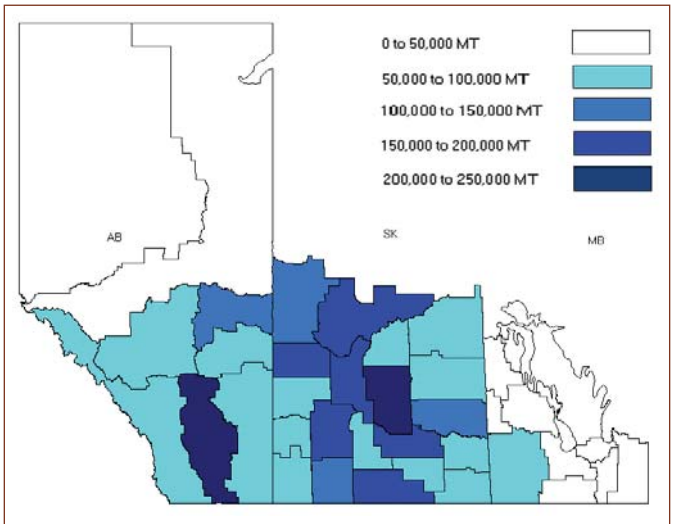
the feed pea FOCUS

CANADIAN PEA PRODUCTION TO EXCEED 3MMT FOR 2006

The 2006 Statistics Canada survey of western Canadian producers indicates that 3.5M acres of peas have been sown, a 4% increase over 2005 plantings. If growing conditions result in similar yields, the 2006 crop will cause pea production to surpass 3MMT for the third consecutive year. The 2005 pea production density graph developed for western Canada (Figure 1) illustrates the significant volume of peas that will soon be coming to a location near you!

Figure 1. 2005 Western Canadian pea production intensity.



Source: Statistics Canada; SAF, and AAFRD

DO PEAS REDUCE INTAKE? STUDIES SAY NO

High palatability is one of the positive attributes of peas. A review of seven previous pea intake studies[2] indicated intake was only reduced if pea-based diets were not supplemented to meet amino acid requirements. However, industry has questioned the intake effects when a dietary transition is made to include peas, to increase pea levels or even to begin a new shipment of peas. Comprehensive work in France measured the effects on performance and feeding behavior when some of these dietary pea "transitions" are made.[3]

In this study, the control diet (P0; Table 1) was reformulated to include increasing levels of peas while maintaining isonutritional levels of net energy (9.6MJ/kg), starch (~44%) and digestible lysine (0.76%), TSAA (0.47%), threonine (0.47%) and tryptophan (0.16%) in diets of growing hogs (initial weight 30.5 to 36kg). Intake and performance following each of the four dietary transitions (P0 →P13; P13 →P26; P26 →P39 or P39 →P0) were then measured in four groups of hogs for rotating one week periods over the next 11 weeks.

The average daily intake of the diets following transition differed significantly, with pea-based P26 and P13 diets recording the highest and lowest intakes, respectively. Average daily intake of the pea-based diets (2553 g/day) numerically greater than that of wheat-soy control (2510 g/day). Growth and feed efficiency were not affected (Table 1).

Table 1. Experimental diet composition (4 primary ingredients shown only) and associated effects on intake and performance.

	P0	P13	P26	P39
Diet composition				
Peas	-	13.0	26.0	39.0
Wheat	40.0	40.0	14.9	25.1
Barley	19.8	14.8	40.0	17.9
SBM 48%	14.2	10.1	6.8	2.1
Performance				
ADG (g/d)	991	987	1013	1000
Intake (g/d)	2510 [b]	2461 [a]	2636 [d]	2563 [c]
Feed/Grain (g/g)	2.67	2.66	2.69	2.69

[a,b,c,d] Diets with different superscripts within rows are significantly different (P<0.001).

The intake pattern was similar for all four dietary transitions: an increase in intake d1 to d4 post-transition, followed by a drop in consumption (Figure 1). However, the presence of peas significantly affected feeding behavior: average meal duration was increased (+2.7 min), but the number of meals (-1.4/day) and intake rate (-1.6g/min) was reduced.

1 http://www.statcan.ca/english/freepub/22-002-XIB/22-002-XIB2006004.pdf

2 Monéger, R. 2001. Effet du pois protéagineux sur les performances et sur le comportement alimentaire du porc lors des transitions alimentaires. Mémoire de fin d'études. UCAAB-ENESAD. 54p.

3 Mathé, D., Monéger, R. and Guillou, D. 2003. Effet du pois protéagineux sur les performances et le comportement du porc lors des transitions alimentaires. Journees Recherche Porcine. 35:127-132. Reprinted and translated with permission by author Dr. Guillou, and acknowledgements to ITP, Paris (editors) and INRA-ITP (organizers).

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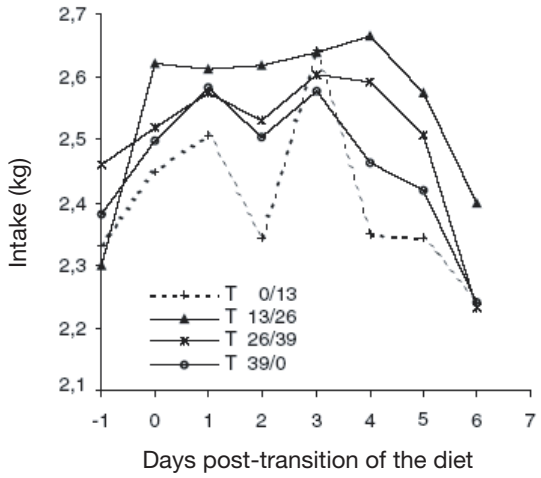
Figure 2 - Intake patterns corresponding to transitions in pea concentrations.[3]



Fluctuating intake levels on the days following dietary transition combined with altered feeding behavior may lead to the assumption that changes involving peas have resulted in reduced intake. However, it should be noted that these effects occurred for both pea-based and control diets and that these effects could be as readily attributed to the accompanying changes in other major ingredient levels. Long-term, detailed records provided the important data: pea diets formulated on the basis of available amino acid and net energy content supported equivalent growth and efficiency despite normal short-term intake variation following transition to new diets.

PEAS COMPLEMENT OTHER WESTERN CANADIAN INGREDIENTS

Pea-cereal rations require attention to methionine/cystine levels, and pea-corn diets may also be deficient in tryptophan. The high net energy content of peas allows them to be used with low-energy, cost-effective ingredients rich in these amino acids, thus providing producers and feed manufacturers greater flexibility to minimize diet costs. (Table 2, below).

Table 1. Net Energy (kcal/kg) and Apparent Ileal Digestible Tryptophan and Meth/Cys Levels (g/100g) for Various Ingredients (As-Fed Basis) with Growing Hogs.

	Tryptophan	Met/Cys	Net Energy	DM content
	g/100g matter		kcal/kg	(g/100g)
Peas*	0.13	0.34	2320	86.4
CM*	0.41	1.51	1510	88.7
Meat Meal (56% CP)	0.26	0.98	2175	94.0
Wheat DDGS*	0.33	0.79	2020	91.4

Source: * INRA-AFZ Tables. ^ 1998 NRC.