

A COMPLETE CV, INCLUDING CURRENT AND APPLIED-FOR FUNDING WITH SUMMARY PAGES, MUST BE APPENDED TO THIS APPLICATION

PLEASE ATTACHED PHOTOCOPIED PAGE WITH ANY ADDITIONAL ASSOCIATED INVESTIGATORS

		Date June 18, 2008		
Family Name Petit	Given Name and Initial(s) Hélène V.	Personal Identification No. (PIN)		
Title of Position Research scientist		Canadian University		
University Department		Campus		
<input checked="" type="checkbox"/> I do not hold an academic appointment at a Canadian University		<input checked="" type="checkbox"/> Place of Employment Agriculture & Agri-Food Canada Dairy and Swine Research & Development Centre		
ACADEMIC BACKGROUND				
Degree	Name of Discipline	Institution	Country	Year
Bachelor's	Agronomy	Laval University	Canada	1982
Master's	Zootechny	Laval University	Canada	1984
Doctorate	Nutrition	Laval University	Canada	1987
Work transfer	Nutrition	Institute of Grassland and Environmental Research	UK	1996-1997
ACADEMIC, RESEARCH AND INDUSTRIAL EXPERIENCE				
Position Held (begin with current)	Institution	Department	Period (yy-yy)	
Study leader on Bioproducts	Dairy and Swine R & D Centre	Ruminant nutrition	2002-now	
Science Advisor, Animal	Dairy and Swine R & D Centre		2002-now	
Production System team	Dairy and Swine R & D Centre		2002-now	
Research Scientist	Sheep Research Farm	Ruminant nutrition	1997- now	
Research Scientist	Dairy and Swine R & D Centre	Ruminant nutrition	1992-1997	
Research Scientist			1987-1991	

RESEARCH SUPPORT				
Family Name and Initial(s) of Applicant	Title of Proposal, Funding Source and Program, and Time Commitment (hours/month)	Amount Per Year	Years of Tenure (yy-yy)	% of Relations or Overlap with Current Projects
List all sources of support held in the past four years, currently held, or applied for, as an applicant or as a co-applicant for a grant (including NSERC grants). Use the following headings: a) support held in the past four years, b) support currently held, and c) support applied for, and use additional pages as required. <u>Please include the Summary Page of all current and pending grants.</u> In addition, please attach any other document(s) pertaining to other research projects required to clarify any potential relationship or overlap with the current research project. Budgets can be added if desired.				
A) Petit HV (AAFC), Cui S (AAFC), Cao R (AAFC), and Benchaar C (AAFC)	Flaxseed hulls for milk production of dairy cows <u>Source: MII with DFC</u> <u>Time commitment: 40 hrs/mth</u>	\$50 000 (2 yrs)	2006-07	None
Petit HV (AAFC), Palin MF (AAFC), Small J (AAFC), Giguère A (AAFC)	Effects of dietary fatty acids on expression of genes involved in establishment of pregnancy of dairy cows <u>Source: MII with DFC</u> <u>Time commitment: 40 hrs/mth</u>	\$65 000 (2 yrs)	2004-2005	None
B) Petit HV (AAFC), Benchaar C (AAFC), Palin MF (AAFC) et al.	Development of new-value-added dairy products from livestock promoting human and animal health <u>Source: A base \$ from AAFC</u> <u>Time commitment: 40 hrs/mth</u>	\$65 000 (4 yrs)	2007-2011	None
Petit HV (AAFC) et al.	Canadian Health and Efficiency Functional Feed Network <u>Source: ABIP program</u> <u>Time commitment: 40 hrs/mth</u>	1,2 million (3 yrs)	2008-2011	None
Petit HV (AAFC) and Benchaar C (AAFC)	Interaction of Rumensin in feed and flaxseed hulls on milk components	\$90,000 (2 yrs)	2007-2009	None

REFEREED JOURNAL PUBLICATIONS (27 in the last five last years, total of 98)

1. Tremblay, G. F., S. Laberge, Y. Castonguay, S. Delaney, D. R. Ouellet, J. Chiquette, H. V. Petit and R. Michaud. 2008. Fate of Bt transgenes and proteins in corn silage, processed grain, and rumen content. *Can. J. Anim. Sci.* 88:85-95.
2. Petit, H. V., F. B. Cavalieri, G.T.D. Santos, J. Morgan, and P. Sharpe. 2008. Quality of embryos produced from dairy cows fed whole flaxseed and the subsequent success of embryo transfer. *J. Dairy Sci.* 91:1786-1790.
3. Martineau, R., H. V. Petit, C. Benchaar, H. Lapierre, D. R. Ouellet, D. Pellerin, and R. Berthiaume. 2008. Effects of lasalocid or monensin on in situ biohydrogenation of flaxseed and sunflower seed unsaturated fatty acids. *Can. J. Anim. Sci.* 88:335-339.
4. Cortes, C., N. Gagnon, C. Benchaar, and H. V. Petit. In vitro metabolism of flax lignans by rumen and fecal microflora of dairy cows. *J. Appl. Micro.* In Press.
5. Petit, H. V., and M. F. Palin. 2008. *Letter to the Editor: A Response to the Comments of Rastani and Kertz (2008)*. *J. Dairy Sci.* 91:2534.
6. Benchaar, C., H. V. Petit, R. Berthiaume, J. Chiquette, D. Ouellet, and Y. Chouinard. 2007. Effects of essential oil on digestion, rumen fermentation, rumen microbial populations, milk production, and milk composition in dairy cows fed alfalfa silage or corn silage as the sole forage source. *J. Dairy Sci.* 90: 886-897.
7. da Silva, D. C., G.T.D. Santos, A. F. Branco, J. C. Damasceno, R. Kazama, M. Matsushita, J. A. Horst, W.B.R. dos Santos, and H. V. Petit. 2007. Production performance and milk composition of dairy cows fed whole or ground flaxseed with or without monensin. *J. Dairy Sci.* 90:2928-2936.
8. Farmer, C., H. V. Petit, H. Weiler, and A.V. Capuco. 2007. Effects of dietary supplementation with flax during prepuberty on fatty acid profile, mammogenesis and bone resorption in gilts. *J. Anim. Sci.* 85:1675-1686.
9. Petit, H. V., M. F. Palin, and L. Doepel. 2007. Hepatic lipid metabolism in transition dairy cows fed flaxseed. *J. Dairy Sci.* 90:4780-4792.
10. Petit, H. V., J. A. Small, M. F. Palin, A. Giguère, and G.T.D. Santos. 2007. Effects of flaxseed supplementation on endometrial expression of ISG17 and intrauterine prostaglandin concentrations in primiparous dairy cows submitted to GnRH-based synchronized ovulation. *Can. J. Anim. Sci.* 87:343-352.
11. Beauchemin, K., S. M. McGinn, and H. V. Petit. 2007. Methane abatement strategies for cattle: lipid supplementation of diets. *Can. J. Anim. Sci.* 87:431-440.
12. Petit, H.V. and G. F. Tremblay. 2007. Determination of protein degradability and its importance in ruminant nutrition. Pages 137 to 164 *in* Dietary Protein Research Trends. J. R. Ling, ed. Nova Science Publishers Inc., 313 p. Hauppauge, NY, USA.
13. Martineau, R., C. Benchaar, H. V. Petit, H. Lapierre, D. R. Ouellet, D. Pellerin, and R. Berthiaume. 2007. Effects of lasalocid or monensin supplementation on digestion, ruminal fermentation, blood metabolites, milk production and milk composition of lactating dairy cows. *J. Dairy Sci.* 90: 5714-5725.
14. Petit, H. V. and C. Benchaar. 2007. Milk production, milk composition, blood composition, and conception rate of transition dairy cows fed different profiles of fatty acids. *Can. J. Anim. Sci.* 87: 591-600.
15. Neves, C. A., G. T. Santos, M. Matsushita, E. M. Alves, R. L. Oliveria, A. F. Branco, D. C. Silva, A. C. Furlan, and H.V. Petit. 2007. Intake, digestibility, milk production,

- and milk composition of Holstein cows fed extruded soybeans treated with lignosulfonate. *Anim. Feed Sci. Technol.* 134:32-44.
16. Petit, H. V. and R. Berthiaume. 2006. Effect of feeding different sources of fat during gestation and lactation on reproduction of beef cows and calf performance. *Can. J. Anim. Sci* 86:235-243.
 17. Petit, H.V. and H. Twagiramungu. 2006. Conception rate and reproductive function of dairy cows fed different fat sources. *Theriogenology* 66:1316-1324.
 18. Ambrose, D., J. P. Kastelic, R. Corbett, P. A. Pitney, H. V. Petit, J. A. Small, and P. Zalkovic. 2006. Lower pregnancy losses in lactating dairy cows fed a diet enriched in alpha-linolenic acid. *J. Dairy Sci.* 89:3066-3074.
 19. Benchaar, C., H. V. Petit, R. Berthiaume, T. D. Whyte, and P. Y. Chouinard. 2006. Effects of addition of essential oils and monensin premix on digestion, ruminal fermentation, milk production, and milk composition in dairy cows. *J. Dairy Sci.* 89:4352-4364.
 20. Gonthier, C., A. F. Mustafa, D. R. Ouellet, R. Berthiaume, and H. V. Petit. 2005. Feeding micronized and extruded flaxseed to dairy cows: Effects on blood parameters and milk fatty acid composition. *J. Dairy Sci.* 88:748-756.
 21. Petit, H. V., M. Ivan, and P. S Mir. 2005. Effects of flaxseed on protein requirements and n excretion of dairy cows fed diets with two protein concentrations. *J. Dairy Sci.* 89:1755-1764.
 22. Cavalieri, F. B. , G. T. Santos, M. Matsushita, H. V. Petit, L. P. Rigolon, D. Silva, J. A. Horst, L. C. Capovilla, and F. S. Ramos. 2005. Milk production and milk composition of dairy cows fed lac100⁷ or whole flaxseed. *Can. J. Anim. Sci.* 85:413-416.
 23. Gonthier, C., A. F. Mustafa, R. Berthiaume, H. V. Petit, and D. R. Ouellet 2004. Feeding micronized and extruded flaxseed to dairy cows: Effects on digestion and ruminal biohydrogenation of long-chain fatty acids. *Can. J. Anim. Sci.* 84:705-711.
 24. Ouellet, D. R., H. V. Petit, D. M. Veira, and E. Charmley. 2004. Estimation of digestibility and intake using a controlled release capsule of alkanes in dairy cows fed two levels of concentrate. *Can. J. Anim. Sci.* 84 :277-289.
 25. Lessard, M., N. Gagnon, D. L. Godson, and H. V. Petit. 2004. Influence of parturition and diets enriched in n-3 or n-6 polyunsaturated fatty acids on immune response of dairy cows during the transition period. *J. Dairy Sci.* 87:2197-2210.
 26. Gonthier, C., A. F. Mustafa, R. Berthiaume, H. V. Petit , R. Martineau, and D. R. Ouellet 2004. Effects of feeding micronized and extruded flaxseed on ruminal fermentation and nutrient utilization by dairy cows. *J. Dairy Sci.* 87:1854-1863.
 27. Petit, H. V., C. Germiquet, and D. LeBel. 2004. Effect of feeding whole unprocessed sunflower seeds and flaxseed on milk production, milk composition, and prostaglandin secretion in dairy cows. *J. Dairy Sci* 87:3889-3898.

Technology Transfer (10 in the last five last years, total of 95)

1. Petit, H. V. 2008. Milk production and milk composition of dairy cows fed flaxseed. 2008. *In: Proc. 62st Flax Institute of the United States*, In press, March 26-28, Fargo, ND, USA.

2. Gagnon, N., C. Cortes, and H. V. Petit. 2008. Metabolism of flax lignans in dairy cows. *In: Proc. 62st Flax Institute of the United States*, In press, March 26-28, Fargo, ND, USA.
3. Cortes, C. N. Gagnon, and H. V. Petit. 2008. *In vitro* metabolism of flax lignans by ruminal and fecal microbiota of dairy cows. *In: Proc. 62st Flax Institute of the United States* In press, March 26-28, Fargo, ND, USA.

Abstracts- Scientific meetings (38 in the last five last years, total of 95)

1. Côrtes, C., D. C. da Silva, R. Kazama, N. Gagnon, C. Benchaar, G. T. dos Santos, L. M. Zeoula, and **H. V. Petit**. 2008. Feed intake, apparent digestibility, and milk composition of dairy cows fed whole flaxseed or/and Ca-salts of flaxseed oil. *J. Anim. Sci.* 86 (Suppl. 1)/*J. Dairy Sci.* 91 (Suppl. 1)
2. N. Gagnon, C. Côrtes, D. C. da Silva, R. Kazama, G. T. dos Santos, L. M. Zeoula, and **H. V. Petit**. 2008. Effect of dietary flax products on concentration of the mammalian flax lignan, enterolactone, in ruminal fluid, plasma, milk, and urine of dairy cows. *J. Anim. Sci.* 86 (Suppl. 1)/*J. Dairy Sci.* 91 (Suppl. 1)
3. Benchaar, C. M. Eugène, C. Côrtes, A. V. Chaves, **H. V. Petit**, T. A. McAllister, A. D. Iwaasa, and P. Y Chouinard. 2008. Milk fatty acid composition of dairy cows fed increasing amounts of linseed oil. *J. Anim. Sci.* 86 (Suppl. 1)/*J. Dairy Sci.* 91 (Suppl. 1)
4. Benchaar, C. M. Eugène, C. Côrtes, A. V. Chaves, **H. V. Petit**, T. A. McAllister, A. D. Iwaasa, and P. Y Chouinard. 2008. Digestion, milk production, and milk composition of dairy cows fed increasing amounts of linseed oil. *J. Anim. Sci.* 86 (Suppl. 1)/*J. Dairy Sci.* 91 (Suppl. 1)
5. Benchaar, C. M. Eugène, C. Côrtes, A. V. Chaves, **H. V. Petit**, T. A. McAllister, A. D. Iwaasa, and P. Y Chouinard. 2008. Effects of increasing amounts of linseed oil on ruminal fermentation, protozoa counts, and forage in situ ruminal degradation in dairy cows. *J. Anim. Sci.* 86 (Suppl. 1)/*J. Dairy Sci.* 91 (Suppl. 1)
6. Brito, A. F., G. F. Tremblay, C. Benchaar, A. Bertrand, Y. Castonguay, G. Bélanger, R. Michaud, H. Lapierre, D. R. Ouellet, **H. V. Petit**, and R. Berthiaume. Digestibility, milk fatty acid profile, and plasma amino acids in lactating dairy cows fed alfalfa cut at sundown or sunup. *J. Anim. Sci.* 86 (Suppl. 1)/*J. Dairy Sci.* 91 (Suppl. 1)
7. Petit, H. V., N. Gagnon, C. Côrtes, D. da Silva, R. Kazama, G.T.D. Santos, L. M. Zeoula, and C. Benchaar. 2008. Transfer of flax lignans in the milk of dairy cows. CSAS.
8. Benchaar, C., M. Eugène, C. Côrtes, A. V. Chaves, H. V. Petit, T. A. McAllister, A. D. Iwaasa, and P. Y. Chouinard. 2008. Yield of fatty acids in milk of dairy cows fed increasing amounts of linseed oil. CSAS.

OTHER EVIDENCE OF IMPACT AND CONTRIBUTIONS:

1. Awards:

2002. Winner of the Award for Excellence in Nutrition and Meat Science. Given by the Canadian Society of Animal Science.

2005. Recipient of the national Gold Harvest Award from AAFC for extraordinary realisations benefiting to AAFC, its clients or employees (1 out of 2 RES, awarded by the deputy minister).

2. Invited talks:

2003. Invited speaker at the Western Nutrition Conference, September 11, Winnipeg: “The Role of Dietary Lipids in Modulating Reproductive Efficiency in Livestock”.

2003. Invited speaker at the Tri-State Dairy Nutrition Conference in Fort Wayne, IN, USA, April 8: “Effects of Dietary Fat on Reproduction”.

2007. Keynote speaker at the Canadian Nutrition Conference: “Nutrition and Reproduction: the importance of omega-3 fatty acids”. Winnipeg, June 22-24.

2008. Keynote speaker at the 62nd Symposium of the Flax Institute of the United States: “Flaxseed and productivity of dairy cows”, Fargo, ND, USA (March 26-28).