of CFs, and minimum dietary diversity, which were associated with child stunting. Mothers trained through the health extension program had better knowledge and practice of optimal IYCF, but this was dependent on the counseling skills of the health extension workers.

Conclusions: Conclusion: The behavioral change communications delivered through the health extension programme could benefit from strategies that enhance the health extension workers' counseling skills on the importance of optimal breast- and complementary feeding for the prevention of stunting.

Keywords: (maximum 5): Keywords: Stunting, complementary feeding, health workers, health system, behavioral change

149/1030. Oxidative stability of pork patties enriched with Omega-3 and natural antioxidants by modifying animal's diet

Author(s): (1) Daniela Miotto Bernardi; (2) Teresinha Marisa Bertol; (2) Arlei Coldebella; (3) Leandro Daniel de Paris; (3) Fabiana Dieterich; (4) Valdemiro Carlos Sgarbieri.

Affiliation: *(1) Nutritionist. Department of Food and Nutrition. School of Food Engineering. State University of Campinas. UNICAMP. Brazil; (2) Researcher. Embrapa Pork and Poultry. Concórdia. Brazil.; (3) Doctor. Falbom agroindustrial. Toledo. Brazil.; (4) Researcher. Department of Food Tecnhnology. School of Food Engineering,.State University of Campinas. Campinas. Brazil.*

Introduction: Omega-3 (ω-3) has low oxidative stability, thus the use of antioxidants is an alternative for increasing the stability of products enriched with this fatty acid

Objectives: To evaluate the effect of the addition of natural antioxidants in the diet of pigs on the oxidative stability of ω-3-enriched patties made with pork loin and pork back fat, over six months of storage

Method / Design: 96 swine were used (48 males and 48 females), aged 127.39±4.29 days, distributed in a randomized block design with 6 treatments for 42 days: (C) control diet without oil addition; (L) diet with 3% linseed oil (OL); (LGP) diet with 3% OL + 10% grape pomace; (LGSE) diet with 3% OL + 0.0022% grape seed extract; (LH) diet with 3% OL + 5% tilapia protein hydrolysate; and (LVitE) diet with 3% OL + 0.04% vitamin E .The patties contained on average 78.37% loin, 19.66% pork back fat, and 1.96% salt. Lipid oxidation was assessed by TBARS (thiobarbituric acid reactive substances) assay at 0, 2, 4, and 6 months of frozen storage

Results: The malonaldehyde levels (mg MDA/kg) were: C=0.21±0.03ab, L=0.27±0.03a, LGP=0.22±0.03ab, LGSE=0.18±0.02b, LH=0.20±0.03b, LVitE=0.15±0.02b($p<0.05$) at time 0; C=0.86±0.08d, L=1.06±0.07bc, LGP=1.22±0.07ab, LGSE=1.26±0.10a, LH=0.97±0.08cd, LVitE=0.65±0.05e ($p<0.001$) after two months of storage; C=1.21±0.10bc, L=1.52±0.12a, LGP=1.35±0.07ab, LGSE=1.38±0.07ab, LH=1.32±0.08ab, LVitE=1.04±0.10c($p<0.05$) after 4 months of storage; and C=1.61±0.16bc, L=1.96±0.17ab, LGP=1.68±0.07abc, LGSE=2.03±0.11a, LH=1.95±0.16ab, LVitE=1.47±0.12c($p<0.05$) at the end of the storage period. Although lower oxidation values were observed in the treatment LVitE when compared to the treatment C after 2 months of storage, no significant differences were observed in the other storage periods.

Conclusions: Vitamin E was the most effective and LH the second most effective in maintaining oxidative stability of ω-3-enriched patties at the concentrations used in this study.

Keywords: (maximum 5): omega-3, vitamin E, natural antioxidants, oxidative stability, pork patties

149/1033. Milk vs soybean polar lipids modulate postprandial lipemia and high-fat diet-induced adiposity in mice

Author(s): (1) Marie-Caroline Michalski; (2) Manon Lecomte; (3) Claire Bourlieu; (4) Gaëlle Pineau; (5) Mathilde Claude; (6) Alain Géloën; (7) Fabienne Laugerette.

Affiliation: *(1) Lipid Nutrition Research Director. INRA UMR1397. CarMeN. Villeurbanne. France; (2) Lipid Nutrition PhD student. INRA UMR1397. CarMeN, Univ-Lyon1. Lyon. France; (3) Milk Lipid Research Scientist. INRA UMR1253. STLO, Agrocampus Rennes. Rennes. France; (4) Technician. INSERM U1060. CarMeN. Villeurbanne. France; (5) MSc Student. INRA UMR1253. STLO, Agrocampus Rennes. Rennes. France; (6) Physiology Research Director. INSERM U1060. CarMeN. Villeurbanne. France; (7) Nutrition Assistant Professor. INSERM U1060. CarMeN, Univ-Lyon1. Villeurbanne. France.*

Introduction: Metabolic diseases are characterized by an altered lipid metabolism including prolonged postprandial hyperlipemia and enhanced adiposity. Numerous food products contain polar lipid emulsifiers which could impact these risk factors. Milk polar lipids (MPL) are emerging ingredients that add value and limit waste of dairy by-products.

Objectives: We investigated the impact of polar lipids from milk vs soybean (SPL) (i) acutely on lipid digestion and postprandial lipemia in mice and (ii) in the long term in addition to a high fat diet.

Method / Design: Swiss mice were gavaged with emulsions stabilized with MPL vs soybean polar lipids (SPL). Both emulsions were also lipolyzed in vitro using a static human digestion model. Moreover, 4 groups of C57BL6 mice received for 8 weeks a normolipidic diet or a high-fat diet based on palm oil (HFP) or a modified isolipidic HFP diet including MPL (HFP-MPL) or SPL (HFP-SPL).

Results: In the digestion study, MPL induced higher plasma concentrations of triglycerides (TG) and nonesterified fatty acids (NEFA) than SPL after 1h, partly explained by the enhanced TG intestinal lipolysis using MPL observed in vitro. Conversely after 4h, MPL group presented lower TG (PtimexPL<0.01). Chylomicrons were larger in MPL group at 2h and 4h ($P<0.01$). The kinetics of synthesis and/or clearance of chylomicrons thus depended on emulsifier type. In the diet study, there was no effect of polar lipids on fasting plasma TAG and cholesterol concentrations. However HFP-MPL diet induced a lower body weight gain ($P<0.05$) and white adipose tissue (WAT) mass ($P<0.05$) than the HFP-SPL diet, despite similar dietary intakes.