tolerance. This may reflect the survival of low amounts of immunoreactive proteins along the gut (Tukur *et al* (1993), *op cit]* and their passage in the blood. In addition, calf Ab titres at weeks 4 and 7 were significantly correlated ($r = +0.64$ and +0.62 respectively, $P < 0.05$) with those in the dams 2 months after calving. These limited results suggest direct (genetic) and/or indirect (colostral) influences of cows on the subsequent systemic Ab response of their offsprings to dietary antigens.

In conclusion, both young and adult ruminants appear to produce dependent but rather moderate levels of plasma antisoya Abs.

α-Galactosides are poorly digested by germ-free chickens. B Carré [1], A Brée [2], J Gomez [1] ([1] *INRA, Station de Recherches Avicoles;* [2] *INRA, Station de Pathologie Aviaire et de Parasitologie, 37380 Nouzilly, France*)

α-Galactosides were previously found to be readily digested by chickens [Carré and Lacassagne (1992) Proc 1st Eur Conf Grain Legumes, Angers, France, Assoc Eur Protéagineux, Paris, 481-482]. However, the origin of this digestion (from endogenous enzyme activity or microbial fermentation) is not known. The current study, conducted with germ-free chickens, was carried out to investigate the origin of α-galactoside digestion in chickens.

Seven white Leghorn chickens (PA 12 strain) were hatched in a germ-free isolator and reared in a cage with *ad libitum* feed and drink, in germ-free conditions [Schellenberg and Maillard (1973) *In: Journées Rech Avicoles Cunicoles* INRA-ITAVI-WPSA, ITAVI, Paris, 283-285]. They were fed a diet sterilized by irradiation (50 kGy), and formulated to contain 21.1% protein, 2 790 kcal/kg, 1.18% calcium and 0.66% phosphorus (Extral 1M, Extralabo, Ets Pietrement, Société Colombe, France). At 5 weeks of age, a sterilized plastic foil was put under the cage, all excreta were collected for 1 d, put in a sealed sterilized box, immediately frozen at –20°C and then freeze-dried.

A sample of excreta was incubated and revealed no contaminating bacteria.

Polysaccharide xylose (from cereals, soyabean and sunflower meals occurring in diet), considered here an undegraded and unabsorbed marker of feed, was measured in both diet and excreta, using GLC analysis of acid hydrolysates [Carré *et al* (1990) *Poult Sci* 69, 623-633]. Polysaccharidic xylose was measured in 6 replicates of feed and excreta.

Oligosaccharides were extracted in methanol/water 50:50 under reflux and determined by GLC analysis of trimethylsilyl derivatives [Sweeley and Walker (1964) *Anal Chem* 36, 1461-1466] using a capillary column (BP1, SGE, Australia), with melezitose as internal standard. Analyses of oligosaccharides were done on 8 replicates of feed and excreta.

Raffinose and stachyose, mainly originating from the soyabean meal in the diet, amounted to 0.39 and 0.79% dietary level, respectively. Their excreta recoveries were 0.86 ± 0.133 (SD) and 0.94 ± 0.131 (SD), respectively. The latter high values show a nearly complete lack of endogenous α-galactosidase activity in the chicken digestive tract. Accordingly, the high digestibility values (0.80–1.0) previously found in chickens for α-galactosides [Carré and Lacassagne (1992), *op cit]* were due to microbial degradation.

Effects of resistant starch supplementation on postprandial metabolism in healthy subjects. N Faisant [1], M Champ [1], S Ranganathan [2], C Azoulay [3], MF Kergueris [3], M Krempf [2] ([1] *INRA, Laboratoire de Technologie Appliquée à la Nutrition;* [2] *Centre de Recherche sur Volontaire Sain, CHU Nord ;* [3] *Laboratoire de Pharmacologie, Hôtel-Dieu, 44000 Nantes, France*)

Resistant starch (RS) is defined as the fraction of starch not absorbed in the small intestine of healthy individuals. These structures reach the colon and are generally fermented by the microflora. The digestive fate of RS is thus comparable to that of dietary fibers and their physiological effects should be considered in that way. When RS was substituted for digestible starch, postprandial glucose and insulin [Behall *et al* (1988) *Am J Clin Nutr* 55, 81-88] and fasting triglycerides and total cholesterol after several weeks were decreased [Behall *et al* (1989) *Am J Clin Nutr* 49, 337-344]. However, the role of RS added to a meal has not been investigated. Knowing the consequences of a supplementation with some dietary fibers on postprandial glycemia [Wolever and Jenkins (1982) *J Plant Foods* 4, 127-138] and lipemia [Cara *et al* (1992) *Am J Clin*