Hamburger weight losses during cooking did not depend upon the nature of the fatty acids, but increased with hamburger fat content. However, sensory evaluation indicate that texture was softer and more tender when unsaturation increased.

Dry sausages prepared with the 4 types of fats presented a normal fermentation pattern (either homo or hetero) during processing. But drying of the sausages was mainly affected by the proportion of unsaturated fatty acids as can be seen from water activity curves. Sausages prepared with the most unsaturated fats could not reach a normal state of dryness and were not palatable.

It can be concluded that when the proportion of C18:2 is above 12—15% in the backfat, good quality dry products cannot be prepared.

Adipocyte and preadipocyte activity during genetic preobesity in the chicken. D. Hermier [1], B. Leclercq [1], A. Quignard-Boulange [2], M. Lafontan [3] *([1] INRA, Nouzilly, 37380 Monnaie, [2] INSERM U177, 20, rue de l'Ecole-de-Médecine, 75006 Paris and [3] INSERM U317, Institut de Physiologie, rue F.-Magendie, 31400 Toulouse, France)*

The storage capacity for plasma triglyceride-derived fatty acids in abdominal adipose tissue has been investigated in 2 lines of chickens selected for either high or low fat content (fat line and lean line, respectively). Adipose tissue cellularity (cell size and number), and lipoprotein lipase (LPL) activity were estimated in 2 and 5 week old male birds. Cellularity and LPL activity at the onset of obesity (2 weeks), were evaluated in the stromal-vascular fraction (SVF) which contains adipocyte precursors. In addition, SVF cells were separated on a Percoll gradient according to their differentiation state, counted and the activities of the differentiation markers, LPL and glycerophosphate dehydrogenase (GPDH), determined. Susceptibility to lipolytic agents (glucagon, norepinephrine) was investigated in abdominal and subcutaneous adipose tissues.

At 2 and 5 weeks of age, the abdominal adipose tissue of the fat birds was characterized by a considerable hyperplasia with a 2-fold increase in cell number and by a marked hypertrophia (30 and 20% increases in cell volume at 2 and 5 weeks of age, respectively), as compared to the lean line. In 2 week old birds, SVF cells were 2.5-fold more numerous in the fat line, although relative cell distribution was similar in the 2 lines. LPL activity per cell was similar in lean and fat birds, irrespective of their age and nutritional state; however, total LPL activity in the whole abdominal fat pad was higher in fat birds at 5 weeks of age. Conversely, LPL activities were higher in all preadipocyte fractions from lean birds, while GPDH activity was unrelated to genotype.

Glucagon was a potent activator of lipolysis, and was more efficient on subcutaneous adipocytes that on abdominal tissue. α_1- and β_1-noradrenergic receptors were apparently absent in the chicken, whereas β2-receptors were numerous but insensitive to agonists normally used in mammals. However, there was no difference between the two lines.

Finally, the overdevelopment of adipose tissue in the fat line could not be related to an increase of LPL activity in adipocytes or to a decrease in their capacity of mobilizing lipids. The higher LPL activity in adipose tissue from fat birds resulted primarily from cell hyperplasia, which represents a major factor in the determination of adiposity in the chicken.

Biosynthesis and utilization of fatty acids in fat or lean chickens. P. Lemarchal and P. Legrand *(Laboratoire de Biochimie, ENSA, 65, rue de Saint-Brieuc, 35000 Rennes, France)*

These studies concern the two lines of chickens, fat (FL) and lean (LL), selected by Leclercq *et al.* (1980) (*Br. Poultr. Sci.* 21, 107-113). They were carried out in an attempt to clarify the mechanism of lower deposition of abdominal fat in LL chickens during growth.

[^{14}C]acetate was injected into 9 week old male chickens of both lines and its