thout (A) heat treatment before drying, were studied. In the first three experimental diets (LA, LB, PB) herring protein was replaced by A, B yeasts and bacterial proteins, respectively. At a second level of incorporation into the diet, the proteins from unicellular organisms replaced in addition the soyabean meal of the control diet (LB_2 and PB_2). Sulphur amino acid levels were equalized by supplementation with synthetic DL-methionine. Daily mean gains (g/day) (T) : 269 — (LA_1) : 261, (LB_1) : 269, (PB_1) : 248 — (LB_2) : 270, (PB_2) : 270 and feed conversion ratios (g/g) — (T) : 1.32 — (LA_1) : 1.30, (LB_1) : 1.29, (PB_1) : 1.43 — (LB_2) : 1.29, (PB_2) : 1.29 were not significantly affected by the experimental treatments. Heat treatment of the yeast significantly improved the apparent digestibility of nitrogen (T : 85.7, LA_1 : 86.1 and LB_1 : 88.2). We also observed a rise in the apparent digestibility of protein when bacterial proteins replaced those of soyabean meal (PB_1 : 86.2 versus PB_2 : 88.0). The nitrogen balances (*g* N retained/day) — (T) : 9.32 — (LA_1) : 9.07 — (LB_1) : 9.27, (PB_1) : 8.49 — (LB_2) : 9.53, (PB_2) : 9.52 — showed that replacement of herring proteins by bacterial proteins (— 0.83 g/day) associated with the presence of soyabean meal in the diet had a depressing effect. On the other hand, alkane yeast proteins (A or B) seemed to be as well used as herring proteins. However, although the effects of the treatments on the retention coefficient of the nitrogen absorbed were parallel to those obtained on the nitrogen balance for the overall experimental period, a significant inferiority was noted for diet LA_1 during the initial period (28-35 days) with a NRC of 50.3 versus 60.1 and 62.6, respectively for diets T and LB_1. The amounts of allantoin excreted : (T) : 102 — (LA_1) : 138, (LB_1) : 137, (PB_1) : 291 — (LB_2) : 467 were proportional to the amounts of nucleic acid ingested, but they did not account for the whole amount of puric nitrogen consumed.

IV. — Physiology of reproduction

Quantitative variations of male pig plasma testosterone from birth to adulthood

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Peripheral venous blood level of testosterone in the newborn piglet shows a large rise after birth with a maximum level between days 5 and 17. Except for a peak between days 35 and 45, values decreased regularly during the first six weeks, then stayed low during the third month. From the fourth to the sixth month, testosterone level progressively increased (onset of puberty). After a larger rise between 180 and 200 days (period when sexual behavior begins), testosterone plasma level increased to reach adult values. According to these observations, the androgenic function in pig presents some analogy with man.