

#### IV. — FEEDING

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### Analytical study of complete mixed feed used in piglet weaning

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The technological and chemical characteristics of diets used in piglets weaned at 2 different ages (21 days = S<sub>21</sub> and 35 days = S<sub>35</sub>) were analysed. Eighteen different pellets (9 for each weaning age) were obtained from pig production units using these diets.

The diameter of the pellets was small (2.4 and 2.65 mm, respectively on an average) and their length was constant (about 12 mm). The durability of the pellets varied very much (from 0 to 8 p. 100), and was 1.6 and 3.2 p. 100 respectively on an average. The hardness was higher for the pellets of group S<sub>35</sub>. The two technological criteria were only little correlated and seemed to depend much more on the manufacturing conditions than on the nature of the feed components. The dry matter contents were high and those of hydrochloric acid insoluble ash negligible. The amount of sulphuric acid was low in spite of a high lipid content. The carbohydrate contents were noteworthy and the amounts of fiber (ADF and cellulose) low in the two groups. The soluble carbohydrate levels were higher in the feed S<sub>21</sub> (17.6 p. 100 versus 7.6 p. 100) but the variations were large (tabl. 2) : the sucrose content and the lactose supplied by dried milk or whey varied largely. The only suitable method of determination was their extraction with 80 °G.L.-alcohol.

The gross energy content (EB) varied in the same way as the lipid content (fig. 2, tabl. 3). The gross energy values calculated with the equation of Schiemann et al. using the data of the chemical analysis were, on an average, 2.8 p. 100 and 1.7 p. 100 higher respectively than those measured with a calorimetric bomb. Some of the feeds showed a slight lysine and sulphur amino acid deficiency as compared to the requirements of piglets weaned at 21 days of age (fig. 3). However, all the feeds contained large amounts or even an excess of minerals relative to the requirements (tabl. 6 and 7). The amounts of trace elements (manganese, iron) exceeded two to ten times the requirements. The copper contents were generally too high in feeds S<sub>21</sub> as compared with recent experimental results on the growth performance in the young.

Weaning diets produced by the animal food industry correspond to the food regulation characteristics and to the experimental estimations of piglet food requirements, varying considerably with the weaning age.

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### Effect of fish meal in a cereal-soybean post-weaning diet for piglets

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The effect of including 5 p. 100 fish meal in diets based on cereals and soybean meal was investigated during two trials performed on piglets of pure bred Large White sows from « minimal disease » herds.