

**Reduction of the amino acids supplied in excess to the growing pig using a precision feeding device***N. Quiniou, L. Ouine and M. Marcon**IFIP, BP 35104, 35651 Le Rheu cedex, France; [nathalie.quiniou@ifip.asso.fr](mailto:nathalie.quiniou@ifip.asso.fr)*

When the body weight (BW) increases, the pigs' requirement in net energy (NE) increases faster than the requirement in amino acids, such as digestible lysine (LYSd). Although the minimum required LYSd/NE ratio decreases with BW, in practice it remains stable over extended periods, depending on the number of diets used by the farmer. During a project co-funded by ADEME, a precision feeding device was developed by IFIP and a French manufacturer (ASSERVA) that allows for individual and dynamic feeding of 96 restrictively fed growing pigs. Each pig wears a RFID ear tag in order to be recognized by the precision feeding device, which consists of a weighing – sorting station and five feeding stations. Each time the pig gets in the weighing station, its BW is recorded but the access to the feeding stations is only possible as long as the cumulated daily feed intake has not reached the daily amount allowed yet. The pig is identified by the electronic feeder and receives doses of 100 g, prepared from two diets formulated at 9.75 MJ NE/kg and 1.0 or 0.5 g LYSd/MJ NE, respectively, and mixed in proportion that depends on the feeding strategy. A 2-phase (2P) was compared to a multiphase (MP) strategy. When all pigs of the 2P group weighed 65 kg on average, the LYSd/NE ratio switched from 0.9 to 0.7 g/MJ. For the MP group, the daily LYSd requirement was assessed per pig according to a factorial approach, the requirement for growth being estimated from the slope of the regression between BW and age over the last 30 days. The daily feed allowance was 4% of initial BW on the first day and then increased by 27 g/d up to 2.4 kg/d for gilts, and 2.7 kg/d for barrows. Over the 40 to 114 kg BW range, the average LYSd/NE ratio was reduced by 11% for the MP group (0.67 vs 0.75 g/MJ for 2P,  $P=0.001$ ). Despite a tendency toward a reduced feed efficiency with the MP strategy (0.34 vs 0.35 for 2P,  $P=0.08$ ), the margin on feed cost remained stable (77.0 vs 76.3 €/pig,  $P=0.05$ ) and the coefficient of N retention was improved by 1.7 point ( $P=0.05$ ), which reduced the N output by 8% ( $P=0.001$ ). A more relevant evaluation of the growing rate from the automatic measurement of the BW has to be implemented in order to improve the feed efficiency in addition to the improvement of the nitrogen efficiency.