**Supplementary table S1**. Composition of the standard diet.

|  |  |
| --- | --- |
| Ingredients (g/kg) |  |
| Wheat | 261∙987 |
| Corn | 159∙992 |
| Barley | 255∙897 |
| Soybean meal | 189∙991 |
| Wheat bran | 49∙998 |
| Cane molasses | 29∙999 |
| Fat | 20∙049 |
| L-lysine-HCl | 2∙710 |
| DL-methionine | 0∙420 |
| L-threonine | 0∙300 |
| Dicalcium phosphate | 5∙000 |
| Calcium carbonate | 12∙859 |
| Sodium chloride | 4∙500 |
| Phytase, acidifier, vitamin and mineral premix\* | 6∙300 |
| Analyzed chemical composition† (%) |  |
| CP (N × 6.25) | 15∙80 |
| Ash | 5∙28 |
| Ether extract | 3∙61 |
| Starch | 39∙50 |
| Crude fiber | 3∙00 |
| NDF | 11∙10 |
| ADF | 3∙60 |
| ADL | 0∙60 |
| GE | 16∙54 |
| Calculated chemical composition†‡ |  |
| NE (MJ/kg) | 9∙825 |
| SID lysine (g/MJ NE) | 0∙874 |
| SID methionine + cystine (% SID lysine) | 63 |
| SID threonine (% SID lysine) | 62 |
| SID tryptophan (% SID lysine) | 20 |
| SID valine (% SID lysine) | 79 |
| SID isoleucine (% SID lysine) | 70 |
| SID leucine (% SID lysine) | 128 |

GE, gross energy; NE, net energy; SID, standardized ileal digestible.

\*The minerals and vitamins mixture provided the following ( /kg of diet): Vitamin A 5000 UI; vitamin D3 1000 UI; vitamin E 20 UI; vitamin B1 2 mg; vitamin B2 4 mg; pantothenic acid 10 mg; vitamin B6 1 mg; vitamin B12 0.02 mg; niacin 15 mg; vitamin K3 2 mg; folic acid 1 mg; biotin 0.2 mg; choline chloride 500 mg; iron 80 mg; copper 10 mg; zinc 100 mg; magnesium 40 mg; cobalt 0.1 mg; iodine 0.2 mg; selenium 0.15 mg.

†Adjusted for 88.8% DM.

‡Calculated from ingredient composition (Sauvant *et al.*, 2002).**Supplementary table S2.** Effect of dietary live yeast supplementation (*Saccharomyces Cerevisiae var. Boulardii*; CNCM I-1079, 1 × 106 CFU/g of feed) on digestibility coefficients and N balance in finishing male pigs housed at thermoneutrality or high ambient temperature (n=10; LS-means).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Period (ambient temperature) |  | Significance\* |
|  | 1 (22°C) | 2 (28°C) | 3 (28°C) |  | rSD | Diet | Period | D×P |
| Digestibility coefficient (%) |  |  |  |  |  |  |  |  |
| DM |  |  |  |  | 0∙8 | 0∙86 | 0∙21 | 0∙18 |
| Non-supplemented diet | 85∙3 | 85∙1 | 85∙4 |  |  |  |  |  |
| Supplemented diet | 84∙5 | 85∙6 | 85∙7 |  |  |  |  |  |
| Organic matter |  |  |  |  | 0∙7 | 0∙98 | 0∙15 | 0∙17 |
| Non-supplemented diet | 87∙0 | 86∙8 | 87∙1 |  |  |  |  |  |
| Supplemented diet | 86∙2 | 87∙3 | 87∙4 |  |  |  |  |  |
| N |  |  |  |  | 1∙5 | 0∙53 | 0∙07 | 0∙93 |
| Non-supplemented diet | 84∙9 | 85∙7 | 86∙2 |  |  |  |  |  |
| Supplemented diet | 85∙3 | 86∙3 | 87∙2 |  |  |  |  |  |
| Energy |  |  |  |  | 0∙8 | 0∙74 | 0∙13 | 0∙14 |
| Non-supplemented diet | 85∙3 | 85∙2 | 85∙4 |  |  |  |  |  |
| Supplemented diet | 84∙4 | 85∙5 | 85∙8 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| CH4 production (L/day) |  |  |  |  | 0∙7 | 0∙16 | <0∙01 | 0∙10 |
| Non-supplemented diet | 5∙0 | 5∙2 | 5∙6 |  |  |  |  |  |
| Supplemented diet | 4∙9 | 5∙9 | 6∙7 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ME/DE (%) |  |  |  |  | 0∙7 | 0∙34 | 0∙54 | 0∙07 |
| Non-supplemented diet | 95∙9 | 96∙2 | 95∙7 |  |  |  |  |  |
| Supplemented diet | 95∙9 | 94∙9 | 95∙9 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| N balance |  |  |  |  |  |  |  |  |
| Digestible N intake (g/d) |  |  |  |  | 5 | <0∙01 | 0∙03 | 0∙15 |
| Non-supplemented diet | 65 | 55 | 55 |  |  |  |  |  |
| Supplemented diet | 72 | 68 | 72 |  |  |  |  |  |
| N retention (g/d) |  |  |  |  | 5 | 0∙10 | 0∙23 | 0∙61 |
| Non-supplemented diet | 34 | 30 | 29 |  |  |  |  |  |
| Supplemented diet | 37 | 35 | 36 |  |  |  |  |  |
| N retention (% of digestible N) |  |  |  |  | 5 | 0∙57 | 0∙76 | 0∙80 |
| Non-supplemented diet | 53 | 56 | 54 |  |  |  |  |  |
| Supplemented diet | 52 | 52 | 51 |  |  |  |  |  |

ME, metabolizable energy; DE, digestible energy

\*Data were analyzed for the effects of diet, period and their interaction (D×P) with the pig as repeated unit between periods (Proc Mixed, SAS, 2004).



**Supplementary Fig. S1.** Bar plot representation of relative bacterial composition at the family level, in feces of pigs sampled at the end of the three experimental periods.

P1\_Ctl, P2\_Ctl, P3\_Ctl, Pigs fed with the standard control diet and respectively sampled at the end of the P1 (22°C), P2 (28°C) and P3 (28°C) period; P1\_LY, P2\_ LY, P3\_ LY, Pigs fed with the live yeast supplemented diet and respectively sampled at the end of the P1 (22°C), P2 (28°C) and P3 (28°C) period.



**Supplementary Fig. S2.** Effect of sampling date and live yeast supplementation on alpha-diversity.

CTL, control standard diet; LY, standard diet supplemented with live yeast.

\* *P* < 0.05.