Supporting information

**Table S1.** Ingredients and composition of the gestation diet

|  |  |  |
| --- | --- | --- |
| Ingredients, % | NDF | HDF |
| Corn (CP 8.2%) | 73.50 | 53.30 |
| Soybean meal (CP 46%) | 16.80 | 10.40 |
| Wheat bran | 2.90 | 16.40 |
| Soybean hull | 2.90 | 16.40 |
| Lysine-HCl (70%) | 0.02 | 0.01 |
| DL-Methionine (98.5%) | 0.01 | 0.04 |
| L-Threonine (98.5%) | 0.00 | 0.03 |
| CaCO3 | 1.08 | 0.86 |
| CaHPO4 | 1.70 | 1.47 |
| Sodium chloride | 0.40 | 0.40 |
| Choline chloride (50%) | 0.14 | 0.14 |
| Vitamin and mineral premix1 | 0.55 | 0.55 |
| Total | 100.00 | 100.00 |
| Nutrient levels, % |  |  |
| Digestible energy, MJ/kg | 13.31 | 12.39 |
| Crude protein | 14.23 | 13.29 |
| Ether extract | 3.07 | 3.08 |
| Crude fiber | 2.87 | 7.89 |
| Neutral detergent fiber | 10.11 | 21.15 |
| Soluble fiber | 1.78 | 2.97 |
| Insoluble fiber | 14.38 | 27.15 |
| Total dietary fiber | 16.16 | 30.12 |
| Ca | 0.90 | 0.84 |
| STTD P | 0.46 | 0.43 |
| Lysine | 0.57 | 0.53 |
| Methionine  | 0.22 | 0.21 |
| Threonine | 0.47 | 0.44 |
| Tryptophan | 0.15 | 0.14 |

1Provided per kg of diet: Zn 100mg, Cu 6mg, Fe 100mg; Mn 10mg, I 0.14mg, Se 0.25mg, VA 14mg, VB6 14mg, VE 30mg, VC 100mg, biotin 0.1mg, folic acid 2.5mg, carnitine 46mg, organic chromium 0.3 mg.

**Table S2**. Phyla with differential abundance between NDF and HDF sows

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Phylum** | **Group with the higher abundance** | ***P*-value** | **Adjusted *P*** | **Effect size** |
| *Bacteroidetes* | HDF | 0.003 | 0.04 | 0.68 |
| *Synergistetes* | HDF | 0.01 | 0.09 | 0.57 |
| *Firmicutes* | NDF | 0.02 | 0.10 | -0.53 |
| *Elusimicrobia* | HDF | 0.07 | 0.19 | 0.43 |
| *Actinobacteria* | NDF | 0.09 | 0.20 | -0.41 |
| *Bacteria unassigned* | HDF | 0.06 | 0.19 | 0.45 |

**Table S3**. Genera with differential abundance between NDF and HDF sows

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Genus** | **Group with the higher abundance** | ***P*-value** | **Adjusted *P*** | **Effect size** |
| *Alloprevotella* | HDF | 0.001 | 0.11 | 0.74 |
| *Anaerovibrio* | HDF | 0.006 | 0.18 | 0.66 |
| *Lachnoclostridium* | HDF | 0.008 | 0.18 | 0.61 |
| *Mailhella* | HDF | 0.01 | 0.18 | 0.59 |
| Prevotellaceae\_unassigned | HDF | 0.01 | 0.18 | 0.57 |
| *Terrisporobacter* | NDF | 0.01 | 0.18 | -0.57 |
| *Pyramidobacter* | HDF | 0.01 | 0.18 | 0.57 |
| *Turicibacter* | NDF | 0.02 | 0.18 | -0.57 |
| Rikenellaceae unassigned | HDF | 0.02 | 0.18 | 0.55 |
| *Sphaerochaeta* | HDF | 0.02 | 0.18 | 0.55 |
| *Agathobacter* | NDF | 0.02 | 0.18 | -0.55 |
| *Catenisphaera* | HDF | 0.02 | 0.18 | 0.55 |
| Clostridiales unassigned | NDF | 0.02 | 0.19 | -0.53 |
| Paludibacteraceae unassigned | HDF | 0.02 | 0.19 | 0.53 |
| Enterobacteriaceae unassigned | NDF | 0.03 | 0.22 | -0.51 |
| *Cellulosilyticum* | HDF | 0.03 | 0.22 | 0.51 |
| Corynebacteriaceae unassigned | NDF | 0.03 | 0.22 | -0.51 |