

**Table S1.** Composition and nutrient levels of the basal feed

| Items                         | Months |       |       |       |       |
|-------------------------------|--------|-------|-------|-------|-------|
|                               | I      | II    | III   | IV    | V~IX  |
| Ingredients                   |        |       |       |       |       |
| Corn silage                   | 45.00  | 40.00 | 30.00 | 25.00 | 20.00 |
| Whole cottonseed              | 0      | 0     | 0     | 0     | 10.78 |
| Flattened corn                | 14.84  | 10.00 | 8.00  | 5.00  | 10.00 |
| Corn                          | 25.17  | 41.36 | 51.06 | 59.93 | 54.36 |
| Soybean meal                  | 8.21   | 3.20  | 0     | 2.00  | 0     |
| Rapeseed meal                 | 0      | 0.54  | 5.17  | 3.57  | 0     |
| Cottonseed meal               | 0      | 2     | 2     | 1     | 1     |
| Pea protein powder            | 3.49   | 0     | 0     | 0     | 0     |
| Fatty acid calcium            | 0      | 0     | 0     | 0     | 1     |
| CaHPO <sub>4</sub>            | 1.12   | 0.80  | 1.10  | 1.28  | 0.65  |
| NaCl                          | 0.62   | 0.30  | 0.47  | 0.50  | 0.47  |
| NaHCO <sub>3</sub>            | 1.11   | 1.00  | 1.28  | 1.00  | 1.15  |
| MgO                           | 0.00   | 0.19  | 0.28  | 0.16  | 0.13  |
| Premix <sup>1</sup>           | 0.44   | 0.61  | 0.64  | 0.56  | 0.46  |
| Total                         | 100    | 100   | 100   | 100   | 100   |
| Nutrition levels <sup>2</sup> |        |       |       |       |       |
| CP (%)                        | 11.94  | 10.95 | 10.80 | 10.60 | 9.80  |
| TDN (%)                       | 72.10  | 76.54 | 77.51 | 78.74 | 80.52 |
| NEm (MJ/kg)                   | 7.44   | 7.97  | 8.14  | 8.31  | 8.53  |
| NEg (MJ/kg)                   | 4.92   | 5.31  | 5.47  | 5.61  | 5.80  |
| Calcium (%)                   | 0.61   | 0.50  | 0.59  | 0.63  | 0.37  |
| Phosphorus (%)                | 0.31   | 0.33  | 0.36  | 0.35  | 0.34  |

<sup>1</sup> Contained the following per kg premix: vitamin A, 4,000,000 IU; vitamin D<sub>3</sub>, 600,000 IU; vitamin E, 120,000 IU; Mn, 3,340 mg; Fe, 4,800 mg; Zn, 12,600 mg; Cu, 3,140 mg; Se, 60 mg; I, 90 mg; Co, 22 mg; nicotinic acid, 5,970 mg; biotin, 200 mg.

<sup>2</sup> Total digestible nutrients (TDN), net energy maintenance (NEm), and net weight gain (NEg) were calculated values, whereas the others were measured values.