

**Table S1.** Specific formulas of different feeds.

| <b>Ingredient (g/kg)</b>              | <b>HFD</b> | <b>WHB</b> | <b>RHB</b> |
|---------------------------------------|------------|------------|------------|
| WHB flour                             | -          | 300        | -          |
| RHB flour                             | -          | -          | 300        |
| Casein, 80 Mesh                       | 258.45     | 223.85     | 225.15     |
| L-Cystine                             | 3.88       | 3.88       | 3.88       |
| Maltodextrin 10                       | 161.53     | 0          | 0          |
| Sucrose                               | 88.91      | 1.34       | 1.7        |
| Cellulose, BW200                      | 64.61      | 56.62      | 55.08      |
| Soybean Oil                           | 32.31      | 25         | 24.28      |
| Lard                                  | 316.6      | 316.6      | 316.6      |
| Mineral Mix, S10026                   | 12.92      | 12.92      | 12.92      |
| DiCalcium Phosphate                   | 16.8       | 16.8       | 16.8       |
| Calcium Carbonate                     | 7.11       | 7.11       | 7.11       |
| Potassium Citrate, 1 H <sub>2</sub> O | 21.32      | 21.32      | 21.32      |
| Vitamin Mix, V10001                   | 12.92      | 12.92      | 12.92      |
| Choline Bitartrate                    | 2.58       | 2.58       | 2.58       |
| FD&C Blue Dye #1                      | 0.06       | 0          | 0          |
| Total (g)                             | 1000.00    | 1000.34    | 1000.94    |

RHB, refined highland barley; WHB, whole-grain highland barley.