**Comparison of nonlinear models to describe the feather growth and development curve in yellow-feathered chickens**

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ANIMAL Journal

**Table S1** *The logistic, Gompertz, and Bertalanffy common used growth curve models in yellow-feathered chickens1*

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| --- | --- | --- | --- |
| Model | Logistic | Gompertz | Bertalanffy |
| Expressions1 | Y=A/(1+Be –kt) | Y=Ae-Bexp(–kt) | Y=A(1-Be –kt)3 |
| Inflection day age2 | (InB)/k | (InB)/k | (In3B)/k |
| Inflection feather mass or length3 | A/2 | A/e | 8A/27 |
| Maximum day growth value4 |  kw/2 | kw | 3kw/2 |

1 Y is the observed weight or length at age t expressed in days;A is the maximum feather weight or maximum feather length; B is parameter; k is the exponential growth rate; t is the daily age; w is inflection feather mass or inflection feather length; e is a natural constant; exp is an e-based index.

2 Inflection day is the fastest growing point.

3 Inflection feather mass is percent of mature feather mass.

4 Maximum day growth value is the largest increase in feather mass or length.