Digestible lysine requirement of broilers:

Model evaluation and development of a Shiny online application in R

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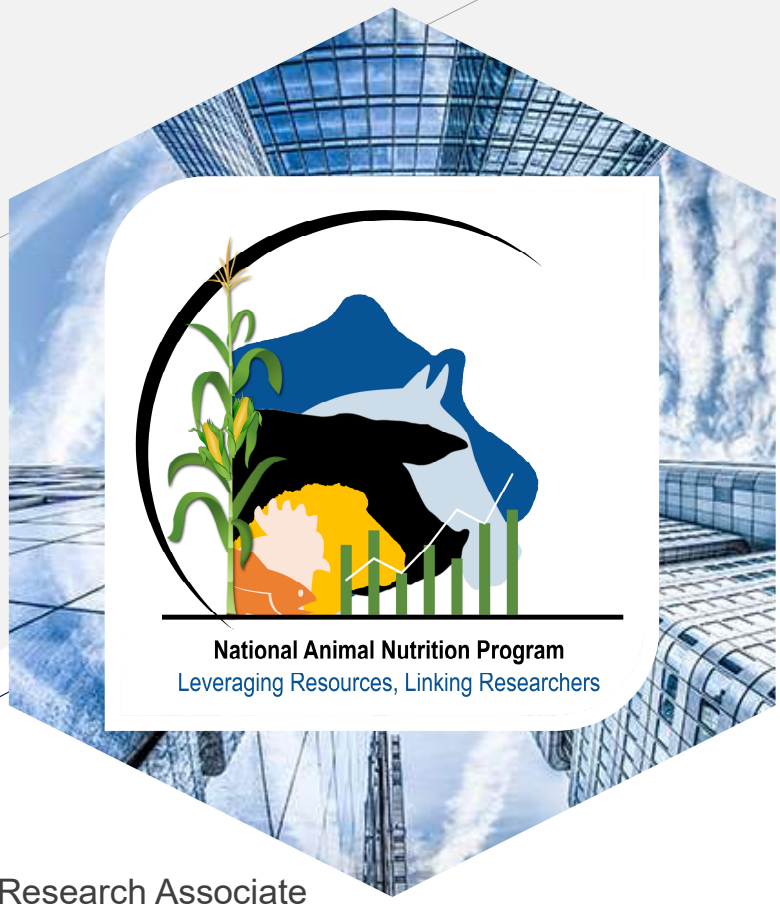
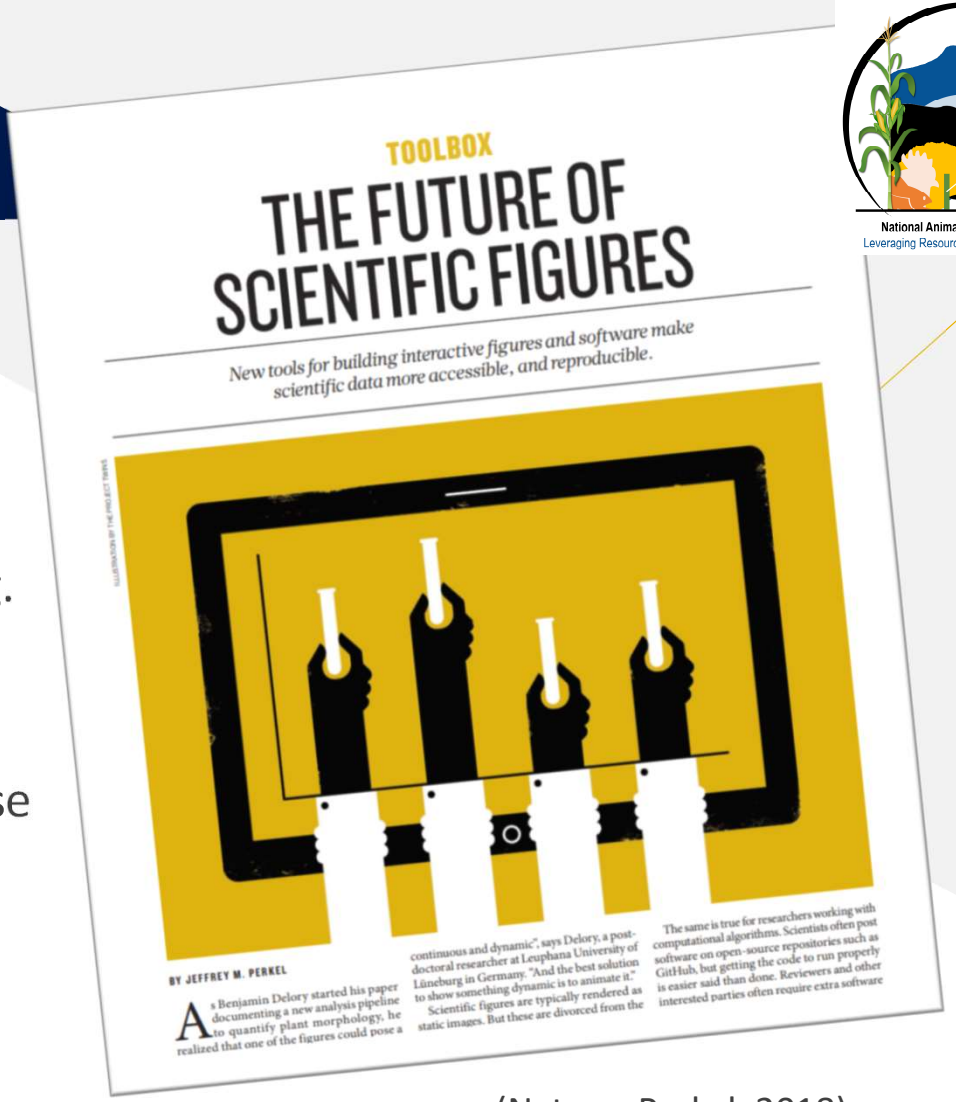
[2]*Virginia Tech*
[3]*UNESP, Faculdade de Ciências Agrárias e Veterinárias,*
[4]*North Carolina State University, Raleigh, NC, USA.*



V. L. Daley
Postdoctoral Research Associate
National Animal Nutrition Program
Modeling Commitee

Introduction

- Prediction models can be used for simulations to support decision-making.
- Interactive visualization figures and codes are important to increase data use for simulations.
- Interactivity is a key to science communication.



TOOLBOX

THE FUTURE OF SCIENTIFIC FIGURES

New tools for building interactive figures and software make scientific data more accessible, and reproducible.

BY JEFFREY M. PERKEL

As Benjamin Delory started his paper documenting a new analysis pipeline to quantify plant morphology, he realized that one of the figures could pose a continuous and dynamic", says Delory, a postdoctoral researcher at Leuphana University of Lüneburg in Germany. "And the best solution to show something dynamic is to animate it." Scientific figures are typically rendered as static images. But these are divorced from the The same is true for researchers working with computational algorithms. Scientists often post software on open-source repositories such as GitHub, but getting the code to run properly is easier said than done. Reviewers and other interested parties often require extra software

(Nature, Perkel, 2018).

Objective

1) To evaluate the Lys requirement model for broilers.

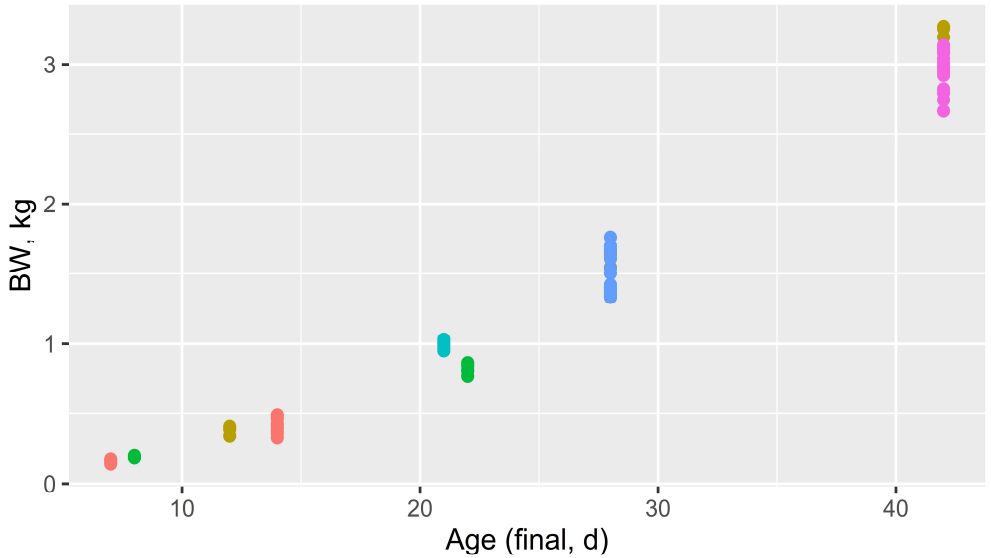
2) To create an interactive web application for simulations.

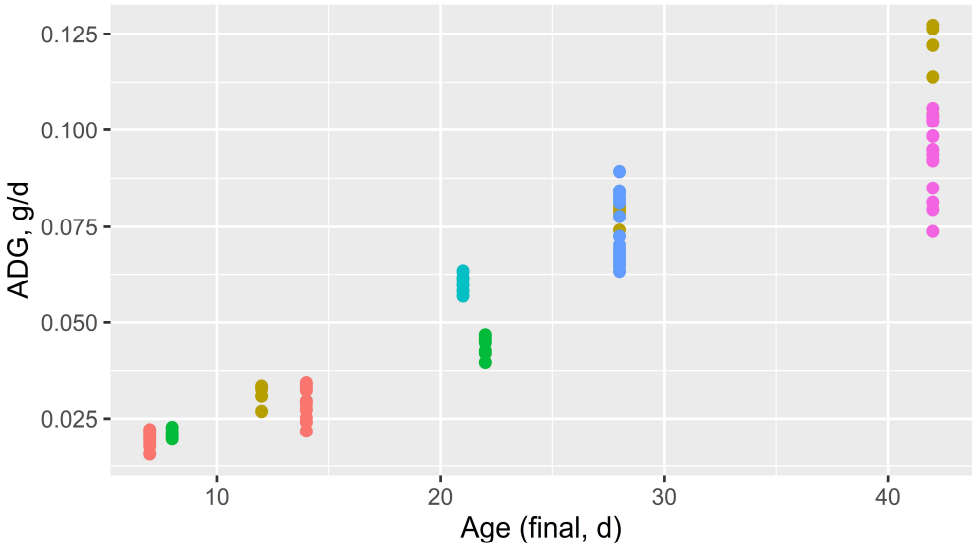
Material and methods

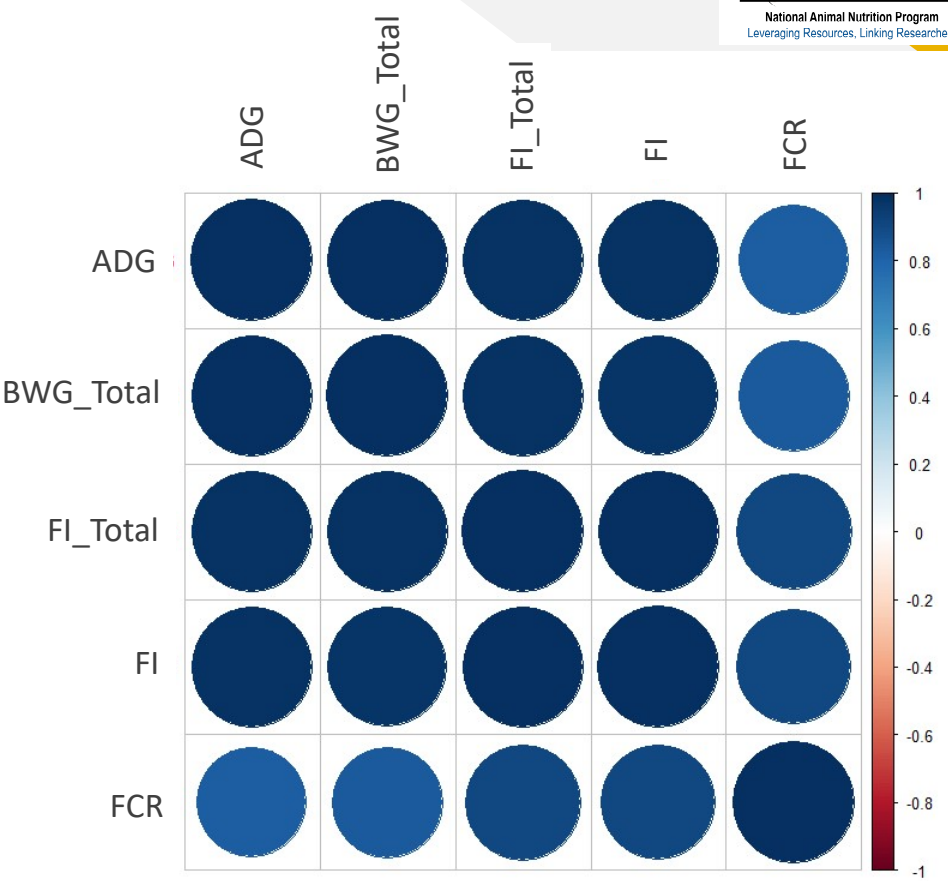
1. Model Evaluation:

Database

- Data from 6 independent studies (120 treatment means).
- Equation for estimating lysine (Lys) requirement for body weight gain (BWG) of broilers proposed by Sakomura et al. (2015).
- Data for line, sex, body weight (BW, kg), and BWG (g/d) were collected.







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Leveraging Resources, Linking Researchers

Material and methods

1. Model Evaluation:

- The equation evaluated was:

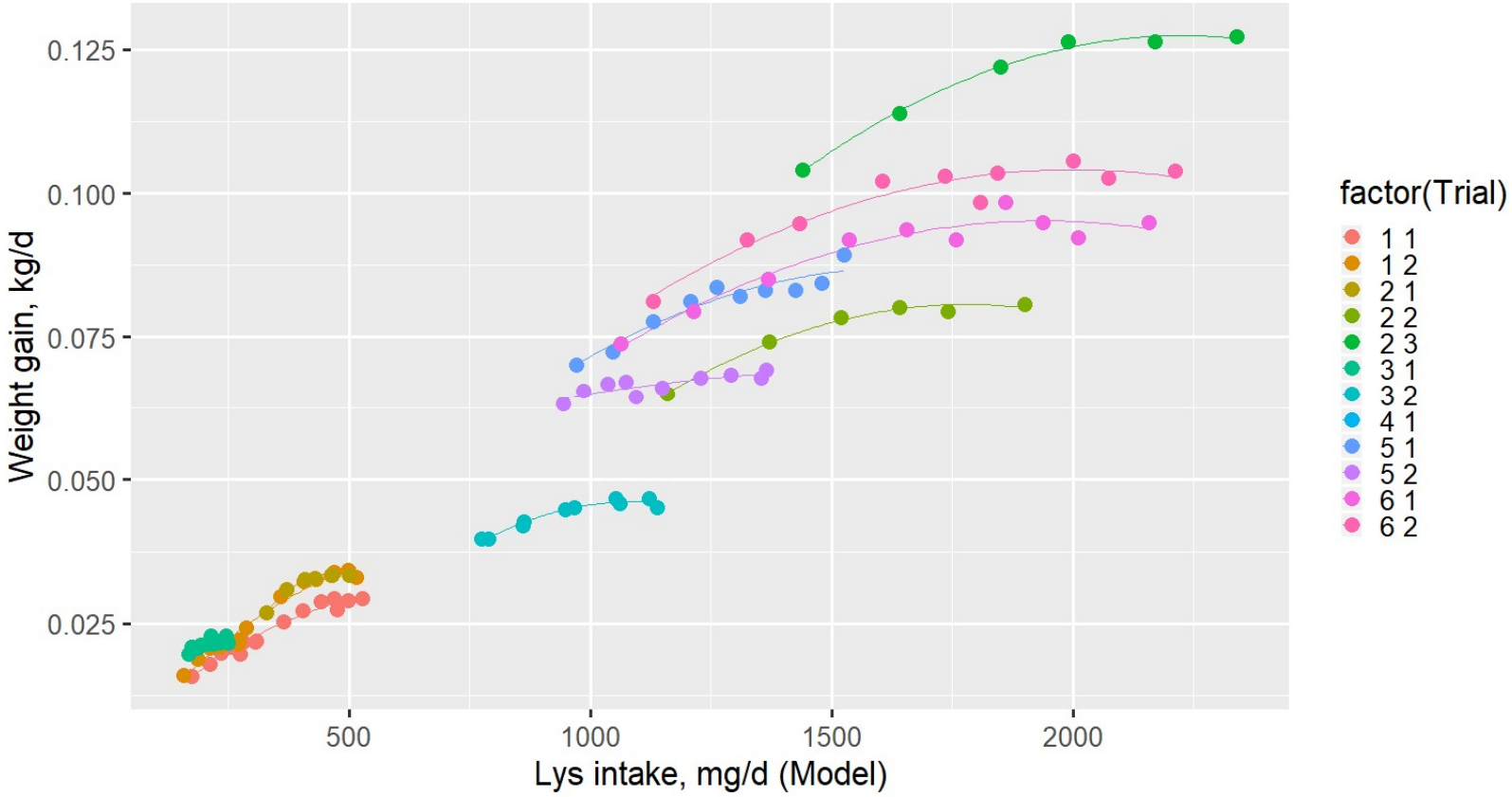
Digestible Lys intake (mg/d) =

$(45.1 \times BW^{0.75}) + [(-23.14 + 13.39 \times BWG) / LysEff]$

- Body weight (BW, kg) and BWG (g/d),
- The efficiency of digestible Lys utilization for growth (LysEff) was 0.77.
- Root mean square errors (RMSE), mean bias, slope bias, concordance correlation coefficient (CCC), and goodness of fit (R^2).

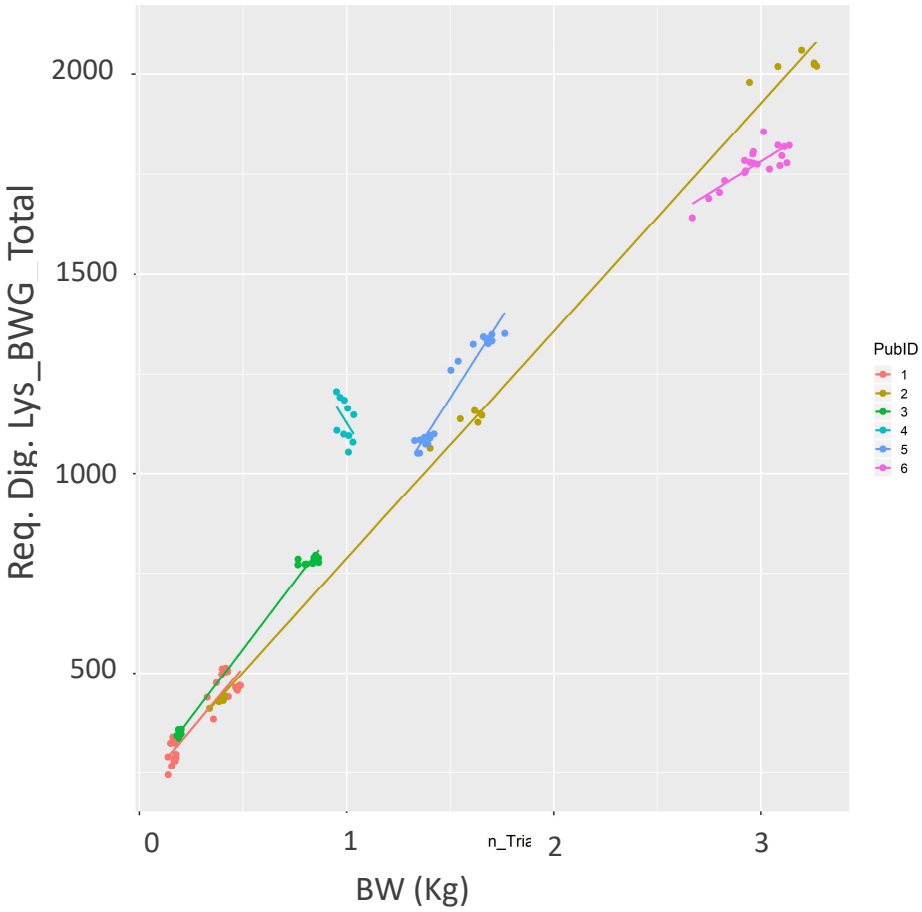
Results

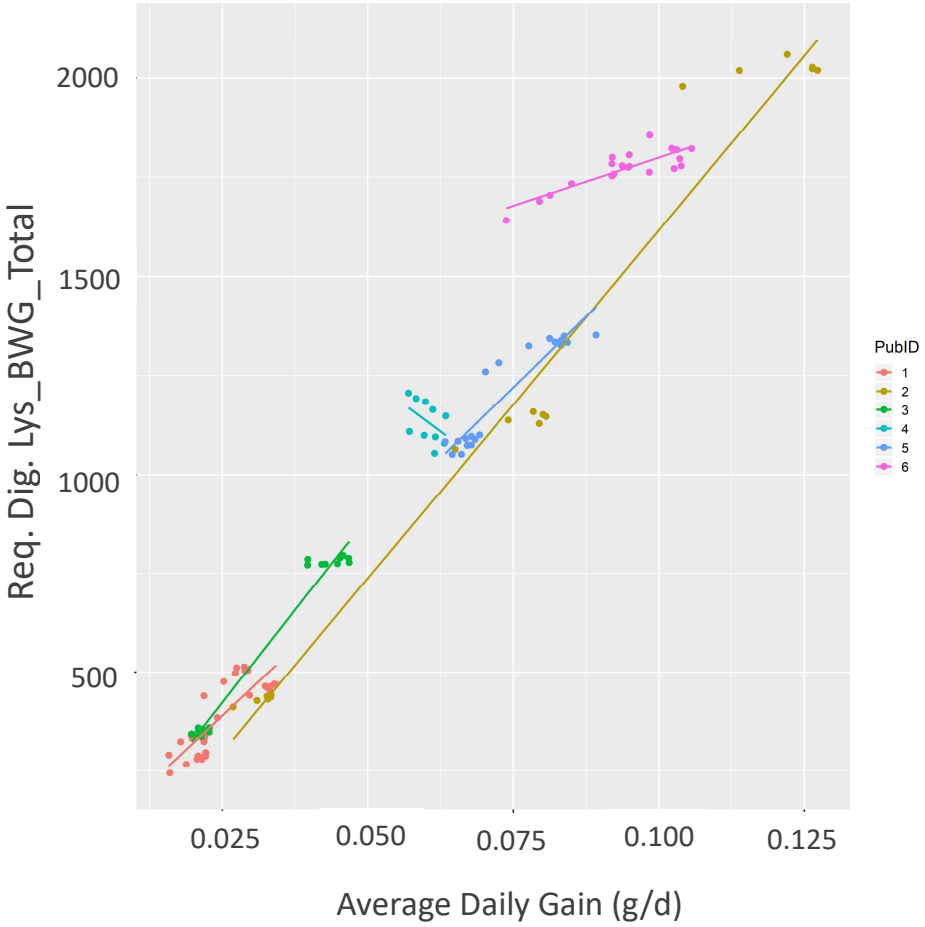
Model Evaluation



Results

Model Evaluation





Results

Model Evaluation

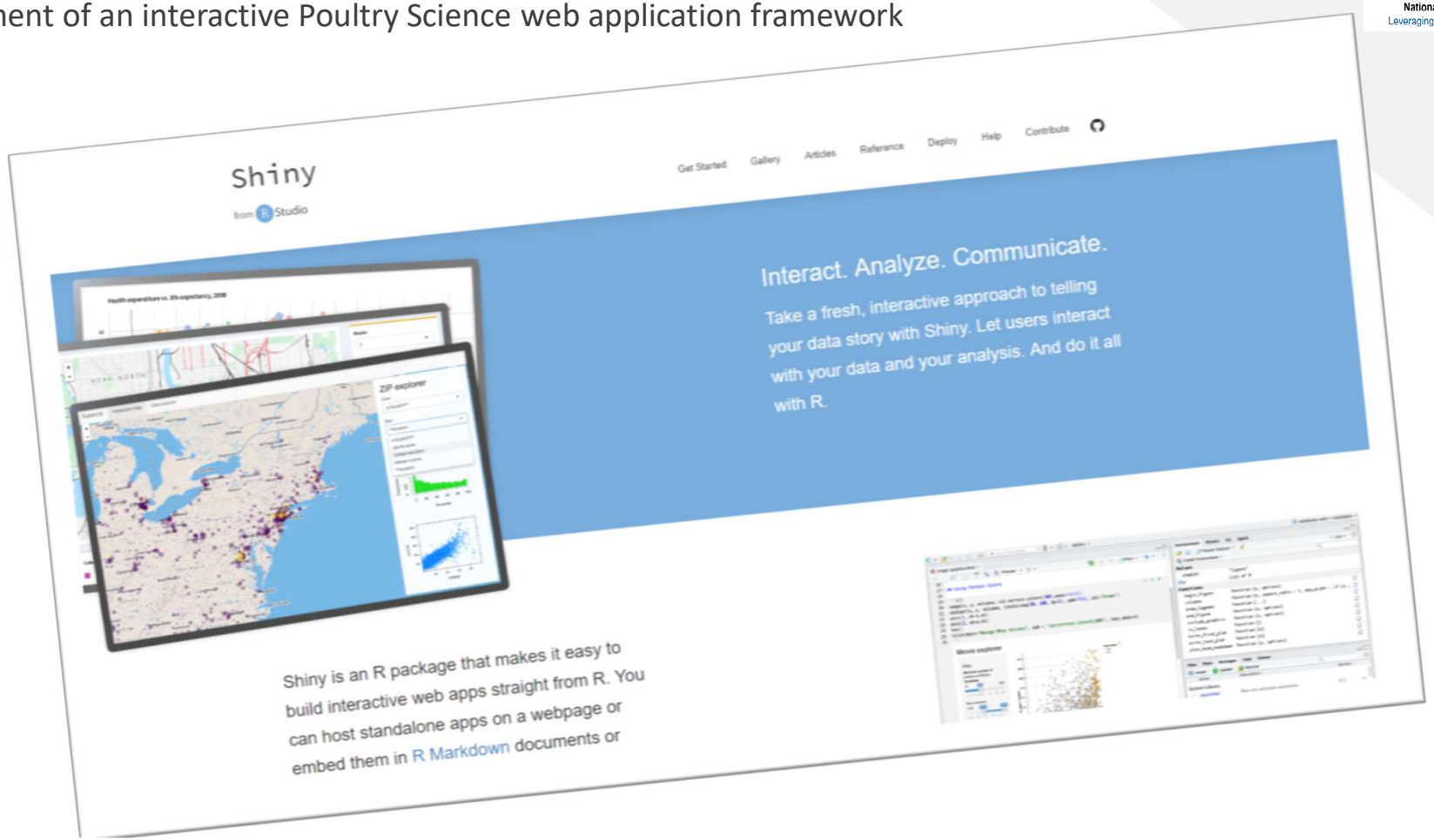
N	120
Observed Req. Lys from studies (mg/d)	967
Predicted Req. Lys from the model (mg/d)	1002
RMSE	114
RMSE, % mean	12
Mean Bias, % MSE	9.28
Slope Bias, % MSE	1.89
Dispersion, % MSE	88.82
Mean Bias	-35
Slope Bias	-0.03
CCC	0.98
Cb	0.998
r	0.982

2. Development of an interactive Poultry Science web application

Framework

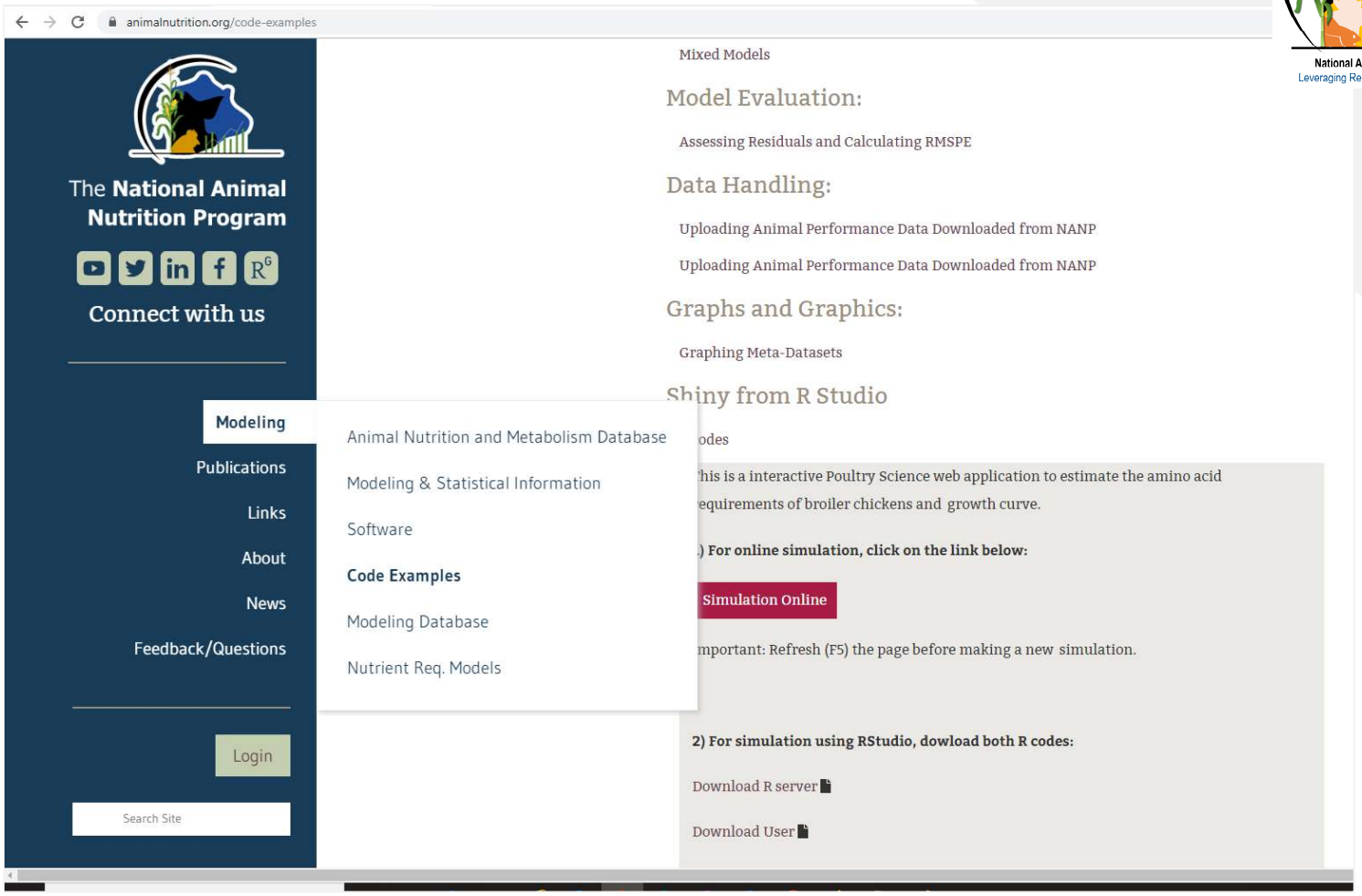
Material and methods

2. Development of an interactive Poultry Science web application framework



Results

https://animalnutrition.org/



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Material and methods

Shiny, rhandsontable, DT, ggplot2, plotly, shinyjs

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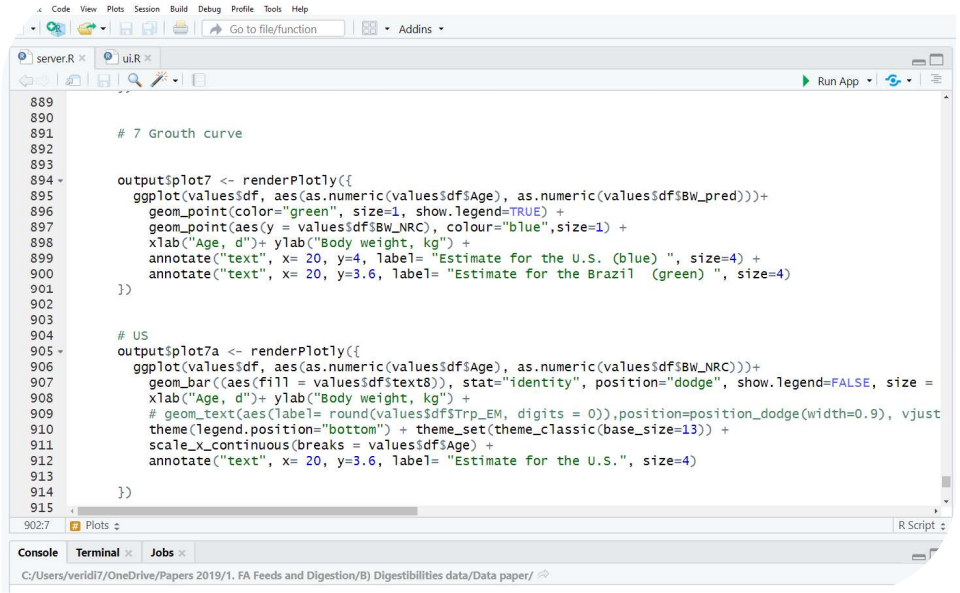
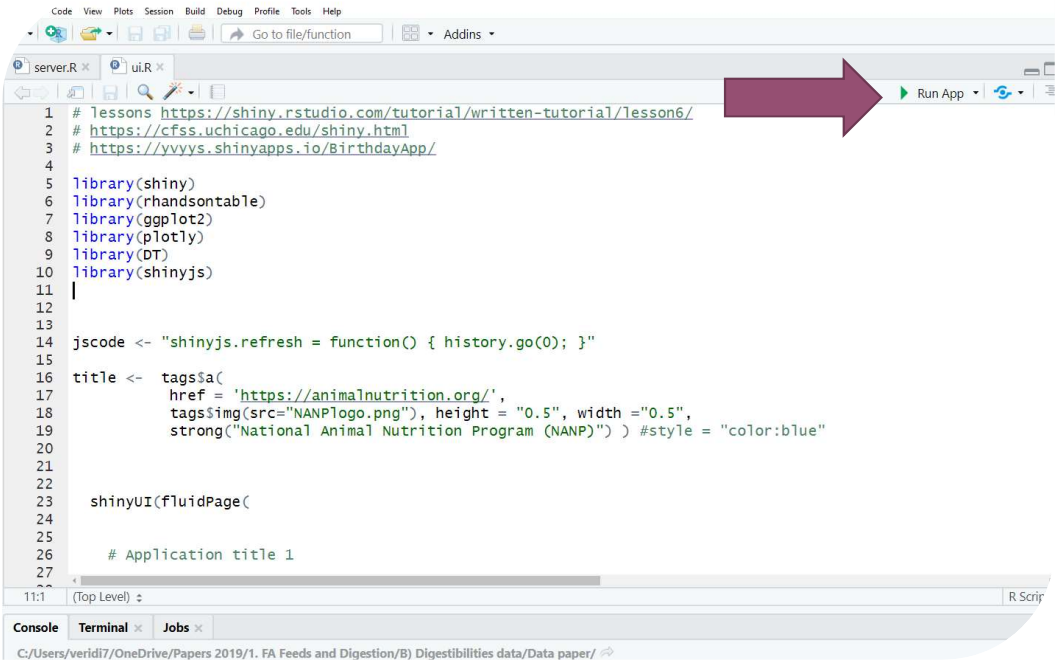
2. Development of an interactive Poultry Science web application framework



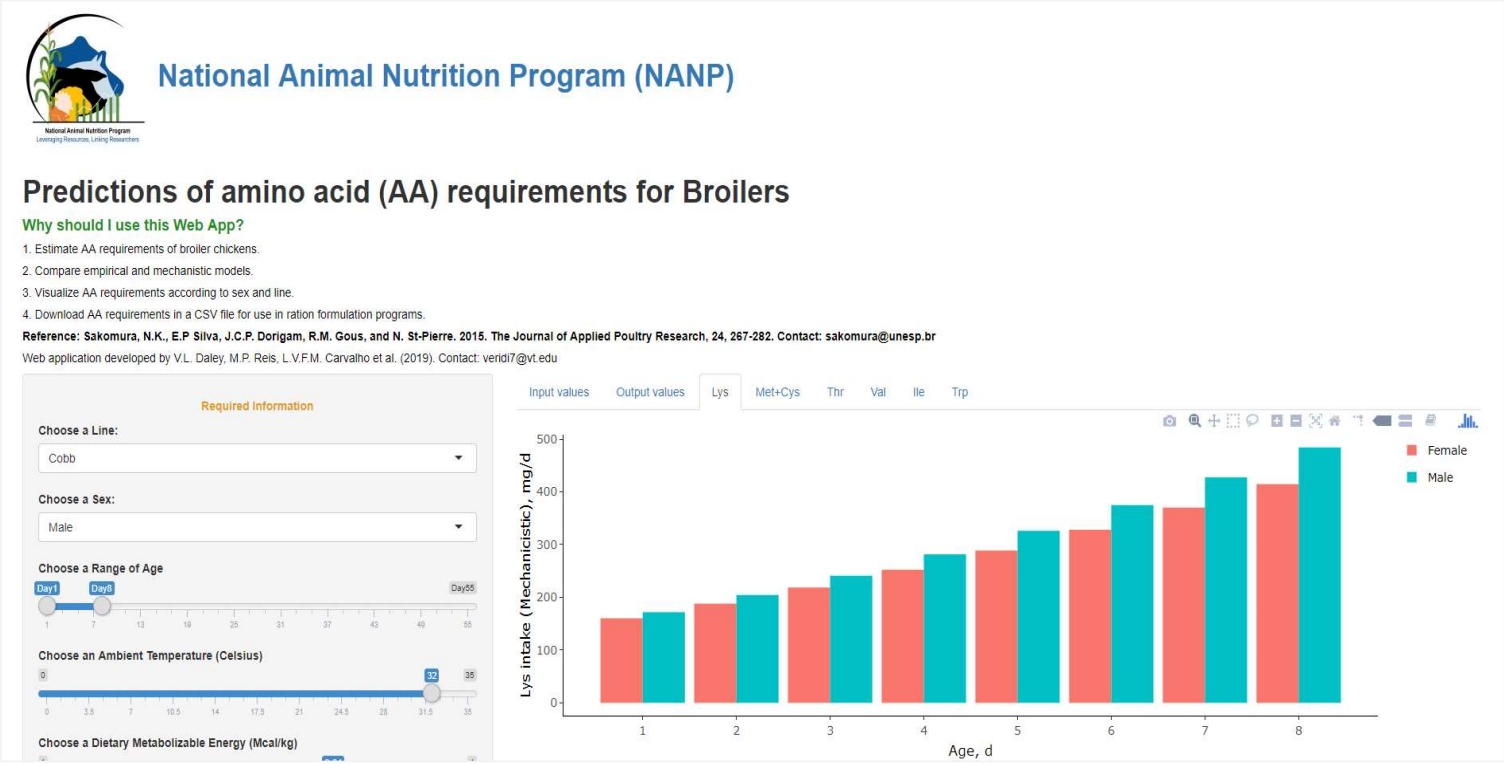
The R server code used equations for predicting the AA requirements of broiler chickens developed by Sakomura et al., 2015.

Two R scripts (user-interface and server, R Core Team 2018) control the layout, appearance, user-input, processing data, and model outputs.



Results

2. Development of an interactive Poultry Science web application framework



Interactive Poultry Science web application to estimate the amino acid requirements of broiler chickens.

National Animal Nutrition Program (NANP)

Predictions of amino acid (AA) requirements for Broilers

Why should I use this Web App?

1. Estimate AA requirements of broiler chickens.
2. Compare empirical and mechanistic models.
3. Visualize AA requirements according to sex and line.
4. Download AA requirements in a CSV file for use in ration formulation programs.

Reference: Sakomura, N.K. et al., 2015. The Journal of Applied Poultry Research, 24, 267-282. Contact: sakomura@unesp.br

Web application developed by V.L. Daley, M.P. Reis, L.V.F.M. Carvalho et al. (2019). Contact: veridi7@vt.edu

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 32 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.04 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve

Show 14 entries — Search:

Age	Line	Sex	Temp	MEd	BW_actual	Intake_actual
No data available in table						

Showing 0 to 0 of 0 entries — Previous — Next

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 32 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.04 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Cu

Show 14 **entries**

Age	Line	Sex	Temp
			No data

Showing 0 to 0 of 0 entries

Required Information

Choose a Line:

Ross

- Ross
- Cobb
- Hubbard

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 32 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.04 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Cu

Show 14 **entries**

Age	Line	Sex	Temp
			No data

Showing 0 to 0 of 0 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Early-developing
Late-developing

Choose a Range of Age

Day1 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 32 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.04 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Cu

Show 14 **entries**

	Age	Line	Sex	Temp
No data				

Showing 0 to 0 of 0 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Female
Male

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 32 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.04 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Cu

Show 14 **entries**

Age	Line	Sex	Temp
			No data

Showing 0 to 0 of 0 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 32 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

15

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

Age	Line	Sex	Temp
			No data

Showing 0 to 0 of 0 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 32 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

15

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32

Showing 1 to 1 of 1 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day10 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 32 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

15

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32

Showing 1 to 1 of 1 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day10 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 26.4 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

15

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Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32

Showing 1 to 1 of 1 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day10 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 26.4 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

44

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32

Showing 1 to 1 of 1 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day10 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 26.4 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

44

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4

Showing 1 to 2 of 2 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day11 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 26.4 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

44

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4

Showing 1 to 2 of 2 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day11 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 26.1 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.1 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

44

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4

Showing 1 to 2 of 2 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day11 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 26.1 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.1 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

49

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4

Showing 1 to 2 of 2 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day11 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 26.1 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.1 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

49

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1

Showing 1 to 3 of 3 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day24 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 26.1 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.1 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

49

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1

Showing 1 to 3 of 3 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day24 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 21.7 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.1 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

49

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1

Showing 1 to 3 of 3 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day24 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 21.7 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.1 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

124

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1

Showing 1 to 3 of 3 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day24 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 21.7 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.1 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

124

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7

Showing 1 to 4 of 4 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day25 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 21.7 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.1 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

124

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7

Showing 1 to 4 of 4 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day25 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 21.4 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.1 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

124

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7

Showing 1 to 4 of 4 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day25 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 21.4 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.2 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

124

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7

Showing 1 to 4 of 4 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day25 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 21.4 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

131

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7

Showing 1 to 4 of 4 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 Day25 Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 21.4 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 3.2 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

131

Update Table Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7
5	25	Ross	Male	21.4

Showing 1 to 5 of 5 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day39 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 21.4 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

131

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7
5	25	Ross	Male	21.4

Showing 1 to 5 of 5 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day39 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.9 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

131

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7
5	25	Ross	Male	21.4

Showing 1 to 5 of 5 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day39 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.9 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

210

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7
5	25	Ross	Male	21.4

Showing 1 to 5 of 5 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day39 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.9 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

210

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7
5	25	Ross	Male	21.4
6	39	Ross	Male	18.9

Showing 1 to 6 of 6 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day40 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.9 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

210

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7
5	25	Ross	Male	21.4
6	39	Ross	Male	18.9

Showing 1 to 6 of 6 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day40 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.8 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

215

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7
5	25	Ross	Male	21.4
6	39	Ross	Male	18.9
7	40	Ross	Male	18.8

Showing 1 to 7 of 7 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day49 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.8 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

215

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7
5	25	Ross	Male	21.4
6	39	Ross	Male	18.9
7	40	Ross	Male	18.8

Showing 1 to 7 of 7 entries

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day49 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.8 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

244

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth C

Show 14 **entries**

	Age	Line	Sex	Temp
1	1	Ross	Male	32
2	10	Ross	Male	26.4
3	11	Ross	Male	26.1
4	24	Ross	Male	21.7
5	25	Ross	Male	21.4
6	39	Ross	Male	18.9
7	40	Ross	Male	18.8
8	49	Ross	Male	18.8

Showing 1 to 8 of 8 entries

National Animal Nutrition Program (NANP)

Predictions of amino acid (AA) requirements for Broilers

Why should I use this Web App?

1. Estimate AA requirements of broiler chickens.
2. Compare empirical and mechanistic models.
3. Visualize AA requirements according to sex and line.
4. Download AA requirements in a CSV file for use in ration formulation programs.

Reference: Sakomura, N.K. et al., 2015. The Journal of Applied Poultry Research, 24, 267-282. Contact: sakomura@unesp.br

Web application developed by V.L. Daley, M.P. Reis, L.V.F.M. Carvalho et al. (2019). Contact: veridi7@vt.edu

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day49 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.8 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

244

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve

Show 14 entries — Search:

	Age	Line	Sex	Temp	MEd	BW_actual	Intake_actual
1	1	Ross	Male	32	3		15
2	10	Ross	Male	26.4	3		44
3	11	Ross	Male	26.1	3.1		49
4	24	Ross	Male	21.7	3.1		124
5	25	Ross	Male	21.4	3.2		131
6	39	Ross	Male	18.9	3.2		210
7	40	Ross	Male	18.8	3.2		215
8	49	Ross	Male	18.8	3.2		244

Showing 1 to 8 of 8 entries

Previous | 1 | Next

National Animal Nutrition Program (NANP)

Predictions of amino acid (AA) requirements for Broilers

Why should I use this Web App?

1. Estimate AA requirements of broiler chickens.
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Reference: Sakomura, N.K. et al., 2015. The Journal of Applied Poultry Research, 24, 267-282. Contact: sakomura@unesp.br

Web application developed by V.L. Daley, M.P. Reis, L.V.F.M. Carvalho et al. (2019). Contact: veridi7@vt.edu

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day49 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.8 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

Insert Feed Intake (g/day)

244

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve

	ValRatio_EM	IsoRatio_EM	TrpRatio_EM	Lys_MM_FI	MetpCys_MM_FI	Thr_MM_FI	Val_MM_FI	Iso_MM_FI	Trp_MM_FI	Lys_EM_FI	MetpCys_EM_FI	Thr_EM_FI	Val_EM_FI	Iso_EM_FI	Trp_EM_FI
1	72.68	60.54	20.30	0.96	0.70	0.68	0.80	0.70	0.17	1.10	0.68	0.82	0.80	0.66	0.22
2	75.74	61.20	19.57	1.08	0.75	0.74	0.87	0.77	0.19	1.35	0.92	0.98	1.02	0.83	0.26
3	75.87	61.23	19.55	1.07	0.74	0.74	0.87	0.76	0.19	1.34	0.92	0.97	1.02	0.82	0.26
4	76.84	61.41	19.40	1.04	0.69	0.70	0.83	0.73	0.18	1.28	0.90	0.92	0.98	0.79	0.25
5	76.90	61.42	19.40	1.03	0.68	0.69	0.82	0.72	0.18	1.26	0.88	0.90	0.97	0.78	0.24
6	77.89	61.57	19.38	0.89	0.58	0.59	0.70	0.62	0.15	1.05	0.73	0.75	0.82	0.64	0.20
7	77.98	61.58	19.38	0.88	0.57	0.58	0.69	0.61	0.15	1.03	0.72	0.73	0.80	0.63	0.20
8	78.93	61.71	19.39	0.77	0.49	0.51	0.61	0.53	0.13	0.88	0.62	0.63	0.70	0.54	0.17

Save | Save Predictions as csv

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve

	BW_pred	BW_NRC	BWG_pred	BPW	BPD	FPW	FPD	FW	FG	MEreq	FI_pred	Lys_Eft	MetpCis_Eft	Thr_Eft	Val_Eft	Iso_Eft	Trp_Eft	Lys_MM	MetpCys_MM	Thr_MM	Val_MM	Iso_MM
1	0.05	0.06	0.01	0.01	1.38	0.00	0.36	2.63	0.64	NA	NA	0.77	0.78	0.73	0.73	0.69	0.71	143.83	104.89	101.40	120.16	105.16
2	0.25	0.30	0.03	0.03	4.57	0.01	1.01	15.76	2.73	NA	NA	0.77	0.78	0.73	0.73	0.69	0.71	473.80	329.35	326.53	384.31	338.22
3	0.29	0.35	0.04	0.04	5.07	0.01	1.11	18.55	3.10	NA	NA	0.77	0.78	0.73	0.73	0.69	0.71	524.45	363.03	360.72	424.36	373.62
4	1.12	1.29	0.09	0.15	12.48	0.03	2.38	94.65	9.79	NA	NA	0.77	0.78	0.73	0.73	0.69	0.71	1292.16	859.36	871.76	1024.63	904.08
5	1.21	1.39	0.09	0.16	13.02	0.03	2.46	104.02	10.38	NA	NA	0.77	0.78	0.73	0.73	0.69	0.71	1348.80	895.02	908.95	1068.64	942.87
6	2.78	2.84	0.12	0.39	17.88	0.07	3.11	282.37	17.18	NA	NA	0.77	0.78	0.73	0.73	0.69	0.71	1868.86	1211.33	1243.30	1475.13	1296.65
7	2.90	2.94	0.12	0.40	18.00	0.08	3.11	297.62	17.49	NA	NA	0.77	0.78	0.73	0.73	0.69	0.71	1882.82	1218.87	1251.61	1486.56	1306.05
8	4.00	3.79	0.12	0.57	17.77	0.11	2.97	440.21	19.15	NA	NA	0.77	0.78	0.73	0.73	0.69	0.71	1880.56	1205.90	1241.73	1492.89	1303.90

Save | Save Predictions as csv

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve

	Lys_MM	MetpCys_MM	Thr_MM	Val_MM	Iso_MM	Trp_MM	LysRatio_MM	MetpCysRatio_MM	ThrRatio_MM	ValRatio_MM	IsoRatio_MM	TrpRatio_MM	Lys_EM	MetpCys_EM	Thr_EM	Val_EM
1	143.83	104.89	101.40	120.16	105.16	25.14	100.00	72.92	70.49	83.54	73.11	17.48	164.62	101.85	123.56	119.65
2	473.80	329.35	326.53	384.31	338.22	81.97	100.00	69.51	68.92	81.11	71.38	17.30	593.49	406.31	429.48	449.51
3	524.45	363.03	360.72	424.36	373.62	90.66	100.00	69.22	68.78	80.92	71.24	17.29	657.76	451.92	475.30	499.01
4	1292.16	859.36	871.76	1024.63	904.08	221.95	100.00	66.51	67.47	79.30	69.97	17.18	1588.33	1111.35	1137.20	1220.41
5	1348.80	895.02	908.95	1068.64	942.87	231.63	100.00	66.36	67.39	79.23	69.90	17.17	1653.41	1157.35	1183.31	1271.41
6	1868.86	1211.33	1243.30	1475.13	1296.65	321.03	100.00	64.82	66.53	78.93	69.38	17.18	2199.64	1540.51	1565.67	1713.29
7	1882.82	1218.87	1251.61	1486.56	1306.05	323.51	100.00	64.74	66.48	78.95	69.37	17.18	2209.78	1547.27	1572.21	1723.14
8	1880.56	1205.90	1241.73	1492.89	1303.90	324.27	100.00	64.12	66.03	79.39	69.34	17.24	2153.91	1503.36	1525.67	1700.19

Save | Save Predictions as csv

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve

	Lys_EM	MetpCys_EM	Thr_EM	Val_EM	Iso_EM	Trp_EM	LysRatio_EM	MetpCysRatio_EM	ThrRatio_EM	ValRatio_EM	IsoRatio_EM	TrpRatio_EM	Lys_MM_FI	MetpCys_MM_FI	Thr_MM_FI	Va
1	164.62	101.85	123.56	119.65	99.66	33.42	100.00	61.87	75.06	72.68	60.54	20.30	0.96	0.70	0.68	
2	593.49	406.31	429.48	449.51	363.22	116.16	100.00	68.46	72.37	75.74	61.20	19.57	1.08	0.75	0.74	
3	657.76	451.92	475.30	499.01	402.73	128.57	100.00	68.71	72.26	75.87	61.23	19.55	1.07	0.74	0.74	
4	1588.33	1111.35	1137.20	1220.41	975.40	308.16	100.00	69.97	71.60	76.84	61.41	19.40	1.04	0.69	0.70	
5	1653.41	1157.35	1183.31	1271.41	1015.53	320.73	100.00	70.00	71.57	76.90	61.42	19.40	1.03	0.68	0.69	
6	2199.64	1540.51	1565.67	1713.29	1354.25	426.33	100.00	70.03	71.18	77.89	61.57	19.38	0.89	0.58	0.59	
7	2209.78	1547.27	1572.21	1723.14	1360.77	428.30	100.00	70.02	71.15	77.98	61.58	19.38	0.88	0.57	0.58	
8	2153.91	1503.36	1525.67	1700.19	1329.23	417.72	100.00	69.80	70.83	78.93	61.71	19.39	0.77	0.49	0.51	

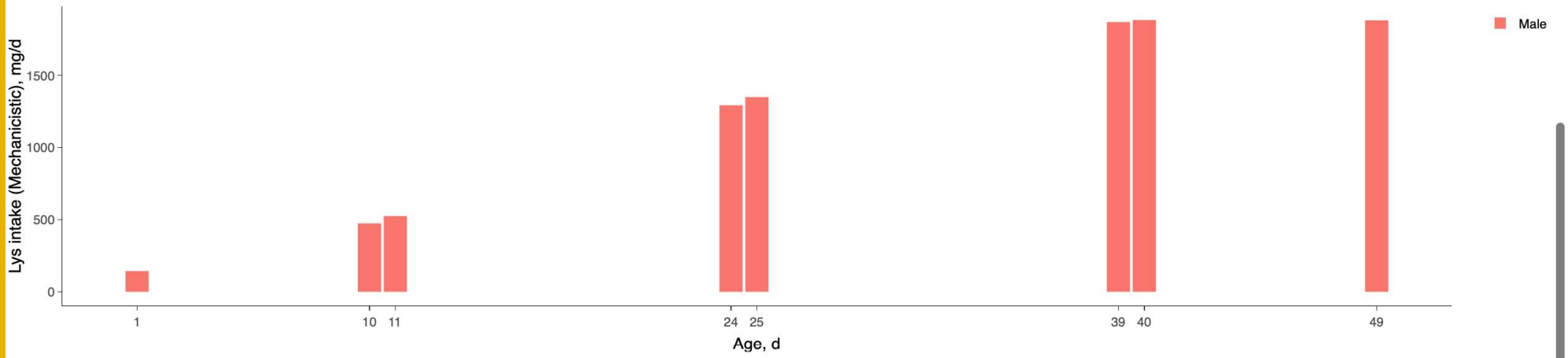
Save | Save Predictions as csv

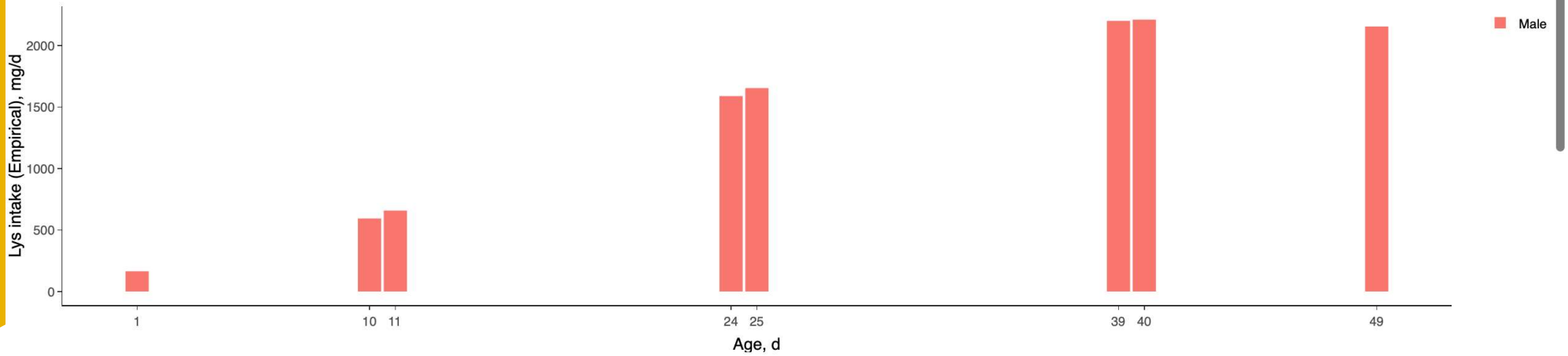
Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve

	ValRatio_EM	IsoRatio_EM	TrpRatio_EM	Lys_MM_FI	MetpCys_MM_FI	Thr_MM_FI	Val_MM_FI	Iso_MM_FI	Trp_MM_FI	Lys_EM_FI	MetpCys_EM_FI	Thr_EM_FI	Val_EM_FI	Iso_EM_FI	Trp_EM_FI
1	72.68	60.54	20.30	0.96	0.70	0.68	0.80	0.70	0.17	1.10	0.68	0.82	0.80	0.66	0.22
2	75.74	61.20	19.57	1.08	0.75	0.74	0.87	0.77	0.19	1.35	0.92	0.98	1.02	0.83	0.26
3	75.87	61.23	19.55	1.07	0.74	0.74	0.87	0.76	0.19	1.34	0.92	0.97	1.02	0.82	0.26
4	76.84	61.41	19.40	1.04	0.69	0.70	0.83	0.73	0.18	1.28	0.90	0.92	0.98	0.79	0.25
5	76.90	61.42	19.40	1.03	0.68	0.69	0.82	0.72	0.18	1.26	0.88	0.90	0.97	0.78	0.24
6	77.89	61.57	19.38	0.89	0.58	0.59	0.70	0.62	0.15	1.05	0.73	0.75	0.82	0.64	0.20
7	77.98	61.58	19.38	0.88	0.57	0.58	0.69	0.61	0.15	1.03	0.72	0.73	0.80	0.63	0.20
8	78.93	61.71	19.39	0.77	0.49	0.51	0.61	0.53	0.13	0.88	0.62	0.63	0.70	0.54	0.17

Save | Save Predictions as csv

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve





Predictions of amino acid (AA) requirements for Broilers

Why should I use this Web App?

1. Estimate AA requirements of broiler chickens.
2. Compare empirical and mechanistic models.
3. Visualize AA requirements according to sex and line.
4. Download AA requirements in a CSV file for use in ration formulation programs.

Reference: Sakomura, N.K. et al., 2015. The Journal of Applied Poultry Research, 24, 267-282. Contact: sakomura@unesp.br

Web application developed by V.L. Daley, M.P. Reis, L.V.F.M. Carvalho et al. (2019). Contact: veridi7@vt.edu

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Male

Choose a Range of Age

Day1 — Day49 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 18.8 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.2 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

Insert Body Weight (kg)

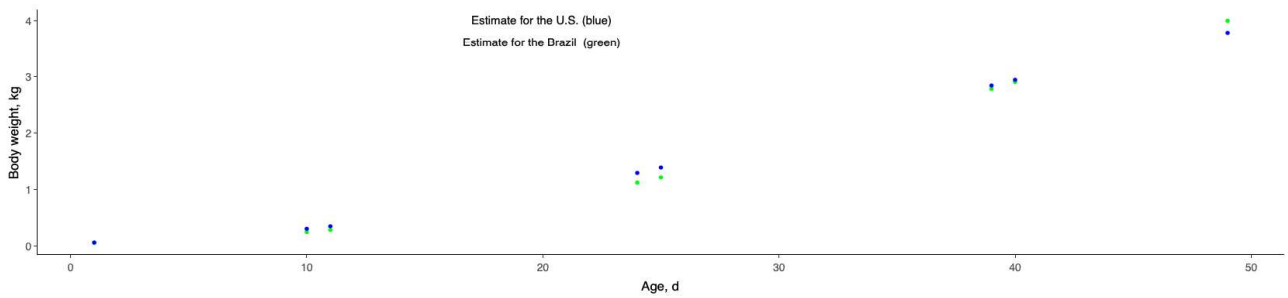
Insert Feed Intake (g/day)

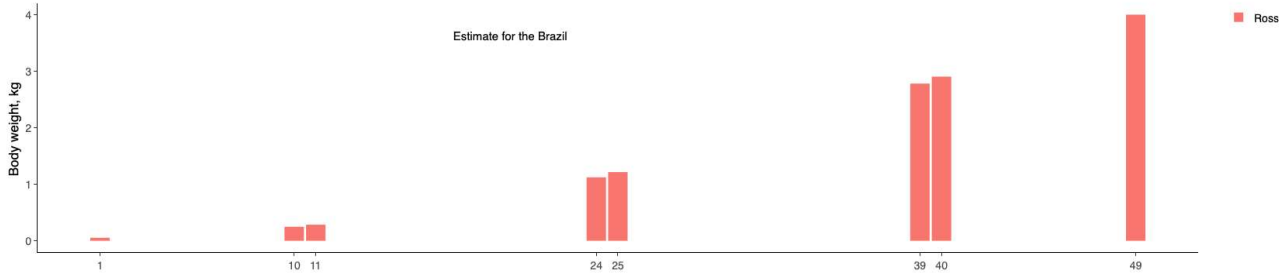
244

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve





Open #tab-4036-9 on this page in a new tab

veridianaldaley.shinyapps.io/NANP_GC/

3. Visualize AA requirements according to sex and line.

4. Download AA requirements in a CSV file for use in ration formulation programs.

Reference: Sakomura, N.K. et al., 2015. The Journal of Applied Poultry Research, 24, 267-282. Contact: sakomura@unesp.br

Web application developed by V.L. Daley, M.P. Reis, L.V.F.M. Carvalho et al. (2019). Contact: veridi7@vt.edu

Required Information

Choose a Line:

Ross

Choose an USA Category:

Late-developing

Choose a Sex:

Female

Choose a Range of Age

Day1 — Day55

1 7 13 19 25 31 37 43 49 55

Choose an Ambient Temperature (Celsius)

0 — 32 — 35

0 3.5 7 10.5 14 17.5 21 24.5 28 31.5 35

Choose a Dietary Metabolizable Energy (Mcal/kg)

1 — 3.04 — 4

1 1.3 1.6 1.9 2.2 2.5 2.8 3.1 3.4 3.7 4

Optional Information

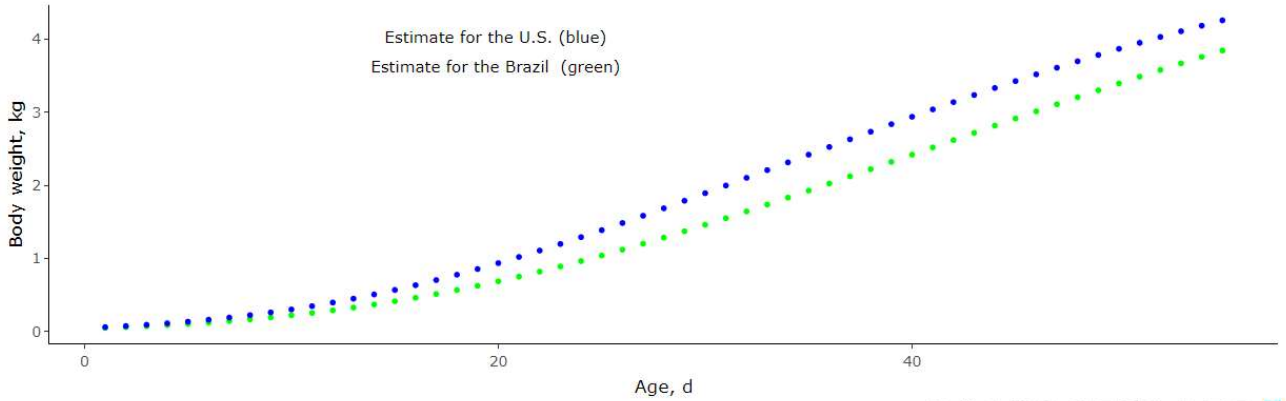
Insert Body Weight (kg)

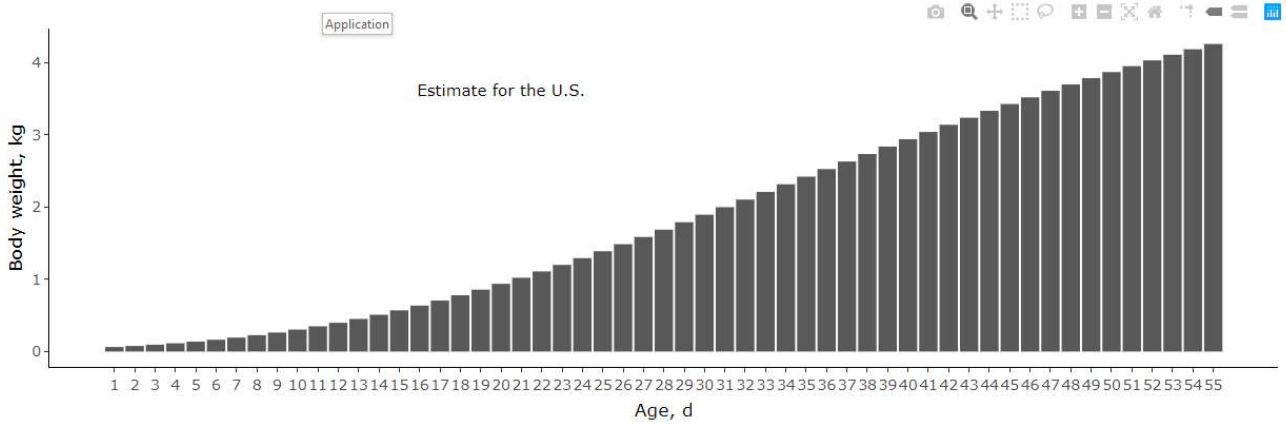
Insert Feed Intake (g/day)

Update Table | Clear

Model developed by N.K. Sakomura et al. (2018), FCAV/UNESP, BR

Input values | Output values | Lys | Met+Cys | Thr | Val | Ile | Trp | Growth Curve





Application

- The factorial model predicts the digestible Lysine (Lys) requirements of broilers by considering body weight and weight growth.
- An interactive web application using Shiny in R was created to support simulations and data visualization by researchers and poultry nutritionists.

Thank You.

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