

## RESEARCH PROTOCOL: PASTURED LIVESTOCK 2017

### Probiotics for pasture-raised chicken

#### Farmer-researcher

Justin Hilborn, Fat of the Land Farm

This document outlines the steps that Justin will follow to execute his research trial, *Probiotics for pasture-raised chicken*, including design, execution, data collection and data sharing. It also serves as a Memorandum of Understanding between Justin and the EFAO.

#### Experimental Design

To test effects on overall health and feed efficiency in his organically and pasture-raised chicken, Justin will compare three commercial poultry probiotics, administered according to the manufacturer's instructions to a no probiotic control. Probiotics will be administered at the same time each day.

#### Treatments

1. Bio-Lac powder abiotic: 0.35g/day/bird
2. Bio-Lac liquid abiotic: 30ml/3.8L of water for 10 days, 15ml/3.8L of water for remaining days, supplemented 10 days, followed by 10 days without; repeated until end of round
3. Acidophilus liquid probiotic: 30ml/3.8L of water for 10 days, 15ml/3.8L of water for remaining days, supplemented 10 days, followed by 10 days without; repeated until end of round
4. Control, no probiotic

For each cohort, Justin will randomly assign mixed run White Rock chicks to one of four brooders, and each brooder will be randomly assigned to one of three probiotic treatments or a no-probiotic control. For the grow-out period on pasture (to 8 weeks), Justin will randomly assign treatments and control to each of four tractors. This will result in a *randomized complete block design* with 5 replicates (cohorts).

#### **Randomized complete block design for brooders and pasture**

Control: no probiotic
Probiotic 1
Probiotic 2
Probiotic 3

#### BROODERS

	Brooder 1	Brooder 2	Brooder 3	Brooder 4
Cohort 1				
Cohort 2				
Cohort 3				
Cohort 4				
Cohort 5				

**TRACTORS**

	Tractor 1	Tractor 2	Tractor 3	Tractor 4
Cohort 1				
Cohort 2				
Cohort 3				
Cohort 4				
Cohort 5				

**Hypothesis**

Probiotics improve feed conversion efficiency, growth rate and survival of White Rock chickens

**Specific predictions**

Chickens receiving a probiotic will have better feed efficiency and grow larger with fewer mortalities than chickens that received no probiotic.

**Measurements**

- Feed consumption of each group in each replicate block (i.e. cohort)
- Average carcass weight for each group
  - i.e. total weight of birds in each group / # birds weighed in each group
- Mortality
- Date and hour that chicks go to brooders
- Date that chicks to pasture

- General observations and management notes, like if there are several “tiny” birds in any one group, or if there was a bad turn in the weather that had a big impact on growth of all birds in one cohort.
- Comments about administering or observed response to a supplement

**Statistical test**

- ANOVA for the three probiotics and control groups

**Estimated Research Budget**

- Bio-Lac Dry - up to \$115
- Bio-Lac Liquid - up to \$250
- Liquid acidophilus Probiotic - up to \$250
- Electrical tape to mark brooders and tractors - ???

**Memorandum of Understanding**

**Compensation for farmer-researcher**

- Farmer-fee of \$500 per farm
  - \$250 receivable upon acceptance of this Research Protocol and Memorandum Of Understanding (MOU)  
Acceptance form: <https://goo.gl/forms/0wMjDHmoLzRwLJIE3>
  - \$250 receivable upon remittance of the experimental data and photos, no later than October 31, 2017 (or October 31, 2018 for experiments with data collection in 2018)
- Reimbursement for approved research expenses
  - See budget above for approved research expenses
  - Fill out Reimbursement Form and send receipts (digital or hard copy)  
Reimbursement form: <https://goo.gl/forms/6Rkj75dU7QGxBNDj2>
- Reimbursement for hotel stay at the Farmer-led Research Workshop, November 28, 2017 in conjunction with the EFAO Conference in Collingwood, Ontario

**In addition to the compensation above, the EFAO will**

- Help set up Research Protocol, write and post Protocol in the Research Library
- Monitor progress of project, including check-ins and help with troubleshooting
- Deliver or mail a Farmer-Researcher farm gate sign
- Conduct training program related to on-farm research (training webinar link [here](#))
- Help analyze data, write and post Research Report in the Research Library

**Farmer-researcher will**

- Maintain current membership in EFAO
- Establish and conduct experiment as outlined in Research Protocol above
- Record data outlined in Protocol and/or data collection sheet
- Take high quality photos throughout the project
- Keep in contact with EFAO with updates, problems and questions

- Turn in data in a digital format and 3-10 best photos by October 31, 2017
- Complete feedback surveys related to the program
- Provide upto 1 hour of mentoring, including reviewing related protocols in 2017 and/or 2018, and phone consultation with fellow farmer-researchers on related projects.

***If possible, the farmer-researcher will***

- Host a Field Day on their farm or participate in a “Field Day” webinar
- Attend and present at the Farmer-led Research Workshop November 28, 2017 in conjunction with the EFAO Conference in Collingwood, Ontario

**Contact**

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Ontario  
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