

Broiler Study Design

Section 1: Designing a Broiler Study

Study Definitions		
Objective:	To evaluate the effects of BiOWiSH® MultiBio products on growth performance of broilers	
Product:	BiOWiSH® MultiBio 3P and/or BiOWiSH® MultiBio 3PS	
Contact Person:		
Name of Farm:		
Location of Farm:		
Trial Dates:	Start:	End:
Feeding System: (To be defined by producer)	Ad Libitum or Controlled (please specify feeding regimen)	
	Feeding Program (please specify diet changes and duration of each phase, if additional diet phases are used please list below)	
	Starter phase: Day :___ Day :___	
	Grower phase: Day :___ Day :___	
	Finisher phase: Day :___ Day :___	
Feed Type: (To be defined by producer)	Starter phase: Crumble or Pellet Grower phase: Crumble or Pellet Finisher phase: Crumble or Pellet	
Composition of Diet:	Feed formulation – Please provide each diet composition or formulation if available	
BiOWiSH® Application Method:	Please Refer to our User Guides: 1) BiOWiSH® MultiBio 3P User Guide for in feed application biowishtechnologies.com/product/multibio-3p/ 2) BiOWiSH® MultiBio 3PS User Guide for drinking water application biowishtechnologies.com/product/multibio-3ps/	

Study Design	
Number of Treatment Groups:	Minimum of 2 required (BiOWiSH® and Control – No BiOWiSH®)
Number of Replications Per Group:	Site-specific depending on flock size and number of houses
Number of Birds Per Treatment Group:	Minimum recommendation is 5,000 to 10,000. The number of birds can vary based on site specific shed designs
Total Number of Birds:	Dependent on number of treatment groups and birds per shed at the site

Study Groups

Group 1 (Control):	Current diet without BiOWiSH® supplementation
Group 2 (BiOWiSH® Treatment)	Current diet with BiOWiSH® supplementation
Treatment Notes:	The control flock(s) should be the same age, be housed in close proximity, and have received the same care, medication, vaccination, diet, and diet changes as per the treated flock(s)

Study Parameters

Body Weight (BW):	Live body weight per group: Starter phase Day :____ Day :____ Grower phase Day :____ Day :____ Finisher phase Day :____ Day :____
Feed Intake:	Measure for each treatment group daily or by feeding period depending on feed delivery system.
Feed Conversion Ratio (FCR):	Calculated at the end of each diet period: FCR = $\frac{\text{Total Feed Intake}}{\text{Total Weight Gain}}$ Starter: ____ Grower: ____ Finisher: ____
Water Intake:	Measure daily or by feeding period depending on water delivery system.
Mortality:	Record the number of dead birds removed daily. Weight of each dead bird. (Weighing deads allows for Mortality adjusted FCR)
Medication:	Record all medication administered (through water, feed, etc.)
Fecal Quality:	Manure appearance (observe daily and note significant changes in consistency)
Hock Burn:	Scale: 0, 1, 2 0 = no burns 1 = burn on 1 hock 2 = burn on both hocks
Litter Scoring:	Scale: 0, 1, 2, 3, 4 0 = Dry, friable, free-flowing 1 = Dry, dusty, very fine texture 2 = Sticky on compression, crumbles 3 = Clod on compression 4 = Wet
Odor Scoring:	Scale: 0, 1, 2, 3, 4 0 = no odor 5 = foul smell odor

Section 2: Trial Site Needs

This section provides an overview of ideal components for a trial site to test BiOWiSH® products in animal production settings. At minimum, trial sites should follow current industry Best Management Practices (BMPs) to protect animal health and welfare and provide a clean, safe environment with access to fresh water and feed. Additional requirements listed below are necessary to accurately capture critical test parameters, including: feed consumption, feed conversion ratio (FCR), average daily gain (ADG), final body weights, milk yield, and other BiOWiSH-recommended parameters.

Biosecurity Program in Place

- Prevent disease introduction to the test site
 - Vehicle baths and antimicrobial sprays
 - Individuals may not visit another animal production site 72 hours prior to entry
- Prevent spread of disease within the test site
 - Thorough sanitation protocol for cleaning between rotations of animal groups
 - Footbaths and other PPE to prevent cross-contamination of animal group

Animal Housing Facilities/Units

- Separate housing for multiple groups (i.e. BiOWiSH® vs Control at minimum) to prevent mixing of animals on different test treatments
 - Land animals – pens, houses or cages
- Provide shade, air flow, ample room, etc. for animal welfare
- Multiple housing units for each treatment group

Feed Source and Storage Facilities

- Capability to separately prepare feed for at least two treatments (i.e. BiOWiSH® vs Control)
 - Prevent mixing of separate treatment feeds (i.e. BiOWiSH® vs Control feeds)
- If feed is purchased, feed must be kept dry and stored out of direct sunlight
- Feed delivery – must have ability to measure feed offered and feed refused to record feed consumption for separate test groups (i.e. BiOWiSH® vs Control)

Water Source

- Clean water source (potable water) for drinking and/or preparing BiOWiSH® products
- If water delivery of BiOWiSH® MultiBio 3PS, separate water delivery set up is necessary for each group

Animal Source

- Source healthy, disease-free stock
- Must use same source for both BiOWiSH® and Control groups
- It is ideal to know the animal background prior to trial start (e.g. vaccine status, days since weaning, days in milk, etc.)



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