FEED INGREDIENTS

# Black Soldier Fly Larvae for Chickens: Will They Cut Your Feed Bill?

Thinking of feeding black soldier fly larvae to your chickens? Work out the costs, what to feed and how to try it on your poultry farm in Zimbabwe.

By FeedSport Nutrition Team · Published 24 October 2026 · 23 min read

KEY POINTS

- Larvae supply protein, fat and minerals but replace only part of a balanced ration. Fresh larvae, full-fat meal and defatted meal are not interchangeable.
- In one broiler trial, balanced diets with 5% or 10% partly defatted larvae meal were used about as efficiently as the usual diet; at 15%, birds needed more feed for each kilogram of gain.
- In the illustrative production example, 100 kg of fresh larvae gives only about 32 kg of dried meal, at about US$1.11/kg.
- At a favourable US$0.60/kg, larvae meal saves only about US$3.50 on the feed for 100 broilers, and a small drop in feed conversion wipes that out. Break-even is about US$0.84/kg.
- Use known, safe inputs, have the ration formulated, and run a small, fair trial comparing feed cost per kilogram of gain before expanding.

When the feed bill keeps going up, growing some of your own chicken feed starts to sound like a good idea. That is part of the appeal of black soldier fly larvae: they can turn suitable food scraps and other organic material into something chickens can eat.

But before you buy breeding stock or start building a larvae unit, you need to know whether the work will pay off. Will you spend less on feed? Will your birds still reach market weight on time? And how much time will it take to keep the larvae coming?

Black soldier fly larvae can be a useful feed ingredient. Research shows that chickens can do well on properly balanced diets containing them. The savings, though, depend on what it costs to grow or buy the larvae and how the birds perform on the finished feed. Some feeding trials have made financial sense; others have produced more expensive feed. [7–10]

If you are considering them for your poultry farm in Zimbabwe, here is what to work out before committing money.

## Start with what the larvae can actually replace

Larvae supply protein, fat and minerals. They can replace part of the ingredients in a balanced ration, but they cannot provide everything a chicken needs on their own.

So keep feeding a complete, balanced ration while you work out where larvae would fit. Simply removing a scoop of commercial feed and adding a scoop of larvae can leave the birds short of some nutrients and oversupplied with others.

It also matters which product you have:

| What you are using | What to keep in mind |
|---|---|
| Fresh or live larvae | Much of the weight is water. A kilogram cannot be compared directly with a kilogram of dry feed. |
| Dried whole larvae or full-fat meal | Water has been removed, but the oil remains. Grinding them does not remove the oil. |
| Partly or largely defatted meal | Some oil has also been removed. This changes the balance of protein and energy. |

A feeding rate worked out for one of these products may be wrong for another. Even two batches of dried meal can differ, depending on what the larvae ate and how they were processed. [1,6]

If you are buying, ask the supplier what is in the bag: moisture, protein, fat and mineral levels, supported by a recent analysis. That gives whoever balances your feed something useful to work with. A promise of “high protein” is not enough.

### Got a larvae analysis or a supplier quote?

Send us the moisture, protein, fat and mineral figures with the delivered price. We will tell you how the product compares with the soybean meal and fish meal in your ration.

Check my larvae product

## Will the chickens grow well?

They can, provided the whole feed meets their needs.

In a Kenyan broiler trial, researchers replaced some soybean and fish-meal protein with black soldier fly meal. Growth and feed use did not differ significantly between the diets, and one larvae-fed group gave a better return on investment. That is encouraging. But those returns depended on the prices used in that trial. [8]

Another broiler study helps explain why adding more is not always better. Birds on balanced diets containing 5% or 10% partly defatted larvae meal used feed about as efficiently as birds on the usual diet. At 15%, they needed more feed for each kilogram of growth. [7]

That extra feed matters. An ingredient can be cheaper to buy and still cost you more by the time the birds are ready to sell.

The same care applies to layers. Some trials have found benefits, but the results are mixed. In one study, hens kept laying at a similar rate while producing lighter eggs. If your customers pay more for larger eggs, that could affect your income. [11,12]

For broilers, watch weight gain, feed used and days to sale. For layers, watch saleable eggs, egg size and feed used. How eagerly the birds eat larvae will not tell you whether the change is paying.

## How much should you feed?

There is no single amount that suits chicks, finishing broilers, laying hens, fresh larvae and dried meal.

This is where it is worth getting help from someone who formulates poultry feed. Give them the larvae analysis and the ingredients you already use. They can work out how much fits and what else needs adjusting, including maize, oil, minerals and other supplements.

Be careful with claims such as “replace 20% of soybean meal”. Suppose your 100 kg batch contains 30 kg of soybean meal. Twenty per cent of that soybean portion is 6 kg. It does **not** mean adding 20 kg of larvae to the batch, and it does not mean a straight 6 kg swap will give the same nutrition.

Fresh larvae need the same care. Broilers can eat them, but a study of live larvae found that larger amounts could reduce dry-feed intake and how efficiently the birds used protein. It did not establish a handful-per-bird rule for every farm. [21]

Our guide to mixing broiler feed in Zimbabwe explains what needs checking when you change an ingredient.

### Have the ration balanced before you mix

Tell us what birds you keep, their age and the ingredients you already use, including the larvae product. We will help you work out how much fits and what else needs adjusting.

Balance my ration

## Free scraps still take money and time to turn into feed

Having a nearby supply of suitable organic material is a useful start. You still have to collect it, prepare it, look after the larvae, harvest them and keep the next batch going.

If you dry and grind the larvae, those jobs add costs too. Your own time counts, even when you are not paying someone a wage.

Here is a simple example. **All prices in this article are made-up budget inputs to show the calculation, not current Zimbabwean quotations.** Replace them with your own costs before making a decision.

Suppose you harvest 100 kg of fresh larvae. Assume 30 kg of that is dry material and the rest is water. After a small processing loss and drying to a product that still contains 10% moisture, you would have about **31.7 kg of dried full-fat meal**.

> **In this example, 100 kg of fresh larvae produces only about 32 kg of dried meal. Most of the weight you started with was water.**

Now add up the batch costs:

| Work or expense | Example cost, USD |
|---|---|
| Collecting and preparing material for the larvae | $7 |
| Labour, including harvesting | $10 |
| Keeping the breeding stock going | $2 |
| Water and electricity before drying | $2 |
| Allowance for equipment wear and space | $4 |
| Drying | $6 |
| Grinding and packaging | $2 |
| Transporting the finished product | $2 |
| **Total** | **$35** |

The dried meal costs **$35 ÷ 31.7 kg = about $1.11 per kilogram**.

Before drying and the later jobs, the fresh larvae cost 25 cents per kilogram in this example. The price looks very different once much of the water has gone.

Feeding fresh larvae avoids the drying bill, but you still need to account for the water when balancing the ration. And if a poor batch gives you fewer larvae, each kilogram costs more. With the same $35 expense but a harvest of only 80 kg fresh larvae, the dried meal would cost about $1.38 per kilogram.

Add any other costs your farm actually faces, such as testing, borrowing money or losses in storage. If you plan to sell the leftover residue as fertiliser, count that income when you have a buyer and know the handling

costs.

## What might you save on 100 broilers?

Let us put the ingredient price into a flock budget.

For this example, we used two grower-feed formulas from a published broiler trial: one without larvae and one with about 10% partly defatted larvae meal. The researchers adjusted several ingredients together to balance the feed. This lets us compare two complete grower feeds instead of guessing at a direct swap. [7]

These are research formulas used for costing, so have a suitable local ration worked out before mixing anything. The partly defatted meal in this example is also different from the full-fat meal in the production example above.

Assume 100 broilers each gain 2 kg before sale. They eat 360 kg of feed across the cycle, and only their grower feed changes. The starter and finisher feeds stay the same. Using the example ingredient prices, the feed bill looks like this:

| Feeding option | Feed bill for the flock | Change from the usual feed |
|---|---|---|
| Usual feed | $187.80 | — |
| Larvae meal bought at $0.60/kg; birds grow equally well | $184.31 | About $3.50 saved |
| Larvae meal bought at $1.20/kg; birds grow equally well | $192.94 | About $5.14 extra |
| Larvae meal at $0.60/kg; birds need 380 kg of feed for the same gain | $194.55 | About $6.74 extra |

The 60-cent larvae price is a favourable example, not an offer we found from a supplier.

Even at that price, the saving is only about $3.50 across 100 birds. A small drop in how efficiently the birds turn feed into weight is enough to wipe it out.

Under these particular assumptions, the partly defatted meal needs to arrive on the farm at **less than about 84 cents per kilogram** to make the grower feed cheaper, with bird performance unchanged. Your own limit will move with soybean prices, the other ingredients and the quality of the larvae meal.

Ask for a delivered price, then compare the cost of the whole ration. After feeding it, compare **feed cost per kilogram of weight gained**. That is a much better guide than the price of one bag. Our feed-cost guide walks through that calculation.

The full assumptions and calculations are at the end for anyone who wants to check or adapt the example.

### Is the larvae price low enough for your farm?

Send us the delivered price of the larvae meal and what you pay for soybean meal and maize. We will cost the whole ration both ways so you can see whether it saves money.

Compare my feed costs

## Can you keep producing enough?

There is already experience with black soldier fly farming in Zimbabwe. The World Bank reported on production among poultry keepers in Buhera, and FAO has described more recent work on insect ingredients for fish feed. These projects show local interest and activity; they do not tell us what every poultry farmer will save. [14,15]

Before sizing a unit for your flock, try a small batch and keep records. Find out how much suitable material you can collect regularly, how long the daily work takes and how many kilograms of larvae you actually harvest.

You will also need a dependable supply of eggs or young larvae, either bought in or produced from your own breeding stock. If you harvest everything, you will have nothing left to keep your breeding cycle going.

Warm conditions help. Practical guidance identifies roughly 24–30°C as favourable, alongside suitable moisture, airflow and feed material. Very wet beds, overheating and irregular egg supply can all disrupt production. [16]

Check what happens in cooler weather as well as during warm months. If you need heating or powered drying, put the actual electricity or fuel use into your costs. If you use the sun for drying, plan for cloudy weather and keep the product protected from dirt and pests.

A nearby, reliable supply of suitable material may be worth more than a distant free supply that takes fuel and hours to collect. Wet material is heavy to move.

For a few backyard chickens, a small unit may fit into the daily routine. For hundreds or thousands of broilers, you need enough consistent feed every week. Keep a backup feed supply while you find out whether the unit can deliver that.

## Be particular about what goes into the larvae unit

Larvae being able to grow on something does not make that material suitable for producing chicken feed.

Use material whose source you know. Keep out mixed rubbish and inputs that may contain pesticides, heavy metals or other chemicals. Do not assume manure is suitable simply because larvae will grow in it. Feed safety depends on the material, the rearing conditions and the handling and processing that follow.

[17,18]

Get practical guidance on hygiene and suitable heat treatment, drying and storage. Heating can help control germs, but it does not remove heavy metals. Keep dried meal dry and protected from pests, and watch for spoilage. [16–18]

If you intend to sell larvae or meal as feed, check the current requirements with the relevant Zimbabwean feed regulator before investing in sales. The country has a farm-feed legal framework, but this investigation did not establish the current approval route for every insect-feed product or input. [19]

There is no sound basis here for budgeting on fewer deaths or replacing normal poultry health care. Keep vaccination, clean water, hygiene and veterinary support in place.

## Give it a small, fair trial before expanding

Once you have a safe product and a balanced ration, a small comparison can help you decide whether to continue.

1. **Write down your starting point.** Record what your usual feed costs and how your birds perform on it.
2. **Compare similar birds under similar conditions.** Keep age, housing and routine care as alike as possible so the comparison is useful.
3. **Measure what goes in and what comes out.** Record feed used, bird weights, deaths and days to sale. For layers, record saleable egg numbers, weights and cracked eggs.
4. **Count the extra work.** Include collecting material, caring for larvae, harvesting, processing and cleaning.
5. **Work out the money left after costs.** A lower feed bill helps only if bird sales or egg income hold up too.

One good batch will not tell you everything about year-round production. Build up gradually as you learn what the system can reliably produce.

Black soldier fly larvae are worth considering where you have suitable inputs, time to manage them and a ration that makes good use of them. Start with what your chickens need, put honest costs against the work, and let the results from your farm guide the next step.

### Planning a larvae trial? Talk to FeedSport

We can help you set up a fair comparison, balance the trial ration and read the results with you. If larvae do not add up for your farm yet, we can help you get more from the feed you already buy.

WhatsApp the team | Other ways to contact us

# Frequently asked questions

### Are black soldier fly larvae the same as ordinary maggots?

“Maggots” is a general word for fly larvae. Black soldier fly larvae come from a particular species, Hermetia illucens. Unidentified larvae collected from waste are not a substitute for a known, properly managed supply.

### Are they better than soybean meal?

It depends on the product, price and ration. Larvae meal can supply useful protein, fat and minerals, but a higher protein percentage on a label does not automatically make it better value. Chickens need the right mix of nutrients they can use. [1,5,6]

### Will the meat or eggs be better?

There is no consistent improvement you can promise a customer. Trials have reported different results for meat quality, egg size, shell quality and yolk colour. Check the results that matter to your buyers rather than assuming every change adds value. [8,11–13]

### Is growing larvae better for the environment?

It can help make use of suitable organic leftovers. The overall benefit also depends on transport, energy for rearing and drying, and what would otherwise happen to that material. A unit using lots of fuel is a different proposition from one using nearby inputs with little processing. [20]

### What should I ask a larvae supplier?

Ask which species they produce, what it is fed on, whether the product is fresh, full-fat or defatted, and whether they have a recent nutrient analysis. Ask about processing, storage life, supply reliability and the price delivered to your farm. FeedSport’s ingredient specification guide can help you make sense of the information.

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# Notes, figures and sources

The practical article ends above. These notes are for readers who want to check the research or adapt the budget. All financial inputs are illustrative; no reliable current Zimbabwean commercial BSFL meal quotation was verified. Local year-round production costs, product-specific digestibility data and the current regulatory route also remain gaps. This is a targeted review of available evidence, not a systematic review or a prediction of farm results.

## Nutrient reference figures

The table uses **dry matter**, meaning the water has been excluded. These are reference averages, not specifications for a Zimbabwean supplier. Calcium and phosphorus have been converted from g/kg to percentages. [1–4]

| Ingredient category | Crude protein, % DM | Fat, % DM | Ash, % DM | Calcium, % DM | Total phosphorus, % DM |
|---|---|---|---|---|---|
| Dried BSFL, higher-fat category | 41.1 | 35.5 | 11.7 | 3.30 | 0.72 |
| Dried BSFL, lower-fat category | 56.6 | 12.0 | 12.8 | 4.32 | 0.80 |
| Solvent-extracted soybean meal, “48% protein + oil” category | 52.6 | 1.8 | 7.1 | 0.38 | 0.71 |
| Fish meal, 65% protein category | 70.7 | 10.0 | 18.2 | 4.48 | 2.86 |
| Solvent-extracted, dehulled sunflower meal | 40.4 | 1.4 | 7.2 | 0.44 | 1.15 |

The BSFL categories are defined by residual fat, rather than a standardised processing method. Their published crude-protein ranges are wide: **35–48.2% DM** for the higher-fat group and **41.1–71% DM** for the lower-fat group. [1]

Notice that the soybean category name includes protein **plus oil**; it is not a guarantee of 48% crude protein. Total phosphorus also does not mean phosphorus available to the chicken. [2–4]

## Protein percentage does not tell the whole story

Crude protein is usually estimated from nitrogen. Insects contain non-protein nitrogen, including in chitin, the structural material in their outer covering. Janssen and colleagues found that the conventional calculation could overstate insect protein. That does not make larvae poor feed; it makes a protein-only comparison incomplete. [5]

Chickens need usable amino acids, especially enough lysine and methionine. Schiavone and colleagues tested two processed BSFL meals in broilers: apparent lysine digestibility was about **80%** in both, while methionine digestibility was **83% and 78%**. These are measurements for those products, not universal coefficients. [6]

Energy also changed with processing. Nitrogen-corrected metabolisable energy—the energy available to the bird after specified losses and adjustment—was **14.87 MJ/kg DM** in the partially defatted meal and **9.87 MJ/kg DM** in the highly defatted meal. The more protein-concentrated product supplied less energy. [6]

So a useful formulation needs digestible amino acids, energy, calcium, available phosphorus, vitamins and other nutrients together. Chitin can complicate digestibility, and a high-calcium ingredient can require changes to added limestone. See the maths behind animal-feed formulation.

## Broiler and indigenous-chicken studies

| Study and birds | What was tested | Main finding and practical limit |
|---|---|---|
| Dabbou et al., 2018; male Ross 308 broilers, 1–35 days [7] | Partially defatted meal at 0%, 5%, 10% and 15% of phase-specific diets | Overall FCR was 1.60, 1.59, 1.60 and 1.72 respectively; higher inclusion worsened conversion. One processed product, under controlled conditions. |
| Onsongo et al., 2018; Cobb 500 broilers, Kenya [8] | Prepupal meal supplied graded shares of dietary protein, replacing soybean/fish-meal protein | No significant differences in daily gain, intake or FCR; the highest treatment produced a 25% better return on investment. Local ingredient prices drove that economic result. |
| Cömert Acar et al., 2024; local and commercial broilers, Türkiye [9] | A by-product ration incorporating 5% dried BSFL | No significant overall effect on slaughter weight, feed consumption or conversion, but feed was about 25% dearer. The diets used less protein than the commercial strain's breeder recommendations, which limits transfer to other programmes. |
| Waithaka et al., 2022; improved indigenous chickens, Kenya [10] | Diets containing 0–20% BSFL meal, replacing fish meal | Chick responses differed by diet; grower daily gain and FCR did not differ significantly. The 20% diet had the highest cost–benefit ratio, 2.12. This was not an uncontrolled scavenging flock. |

**FCR**, or feed conversion ratio, is feed eaten divided by weight gained. A higher number means more feed was needed for each kilogram of gain.

These findings are not necessarily contradictory. The experiments used different products, replacement ingredients, birds and prices. "No significant difference" also does not prove two diets will perform identically on every farm.

## Fresh-to-dried batch calculation

The production example assumes 100 kg fresh larvae at 30% dry matter, loss of 5% of that dry matter during processing, and a finished full-fat meal at 90% dry matter. Finished output is 100 × 0.30 × 0.95 ÷ 0.90 = 31.667 kg. The $35 batch cost gives $1.1053/kg before rounding. This calculation starts with harvested larvae; it does not estimate the amount of waste needed to grow them.

## Compare the protein—but do not stop there

Here is a first-pass comparison using explicitly assumed, **as-fed** crude-protein contents:

| Option | USD/kg product | Assumed crude protein | USD/kg crude protein |
|---|---|---|---|
| Bought soybean meal | 0.63 | 48% | 1.31 |
| Bought partially defatted BSFL meal | 1.20 | 50% | 2.40 |
| Farm-produced full-fat meal from the batch above | 1.1053 | 37% | 2.99 |

Calculation: price per kilogram ÷ protein fraction. The assumed soybean grade here differs from the reference-table category above.

This screen favours soybean meal at these prices, but gives no credit for useful insect fat or minerals. Nor does it account for amino-acid availability. A more useful amino-acid comparison is **price ÷ kilograms of digestible lysine per kilogram of ingredient**, using matching poultry digestibility methods and product-specific data. Repeat this for methionine and other limiting amino acids; one favourable number cannot value the entire ingredient. Those data were not available for actual Zimbabwean products, so a numerical comparison would imply precision we do not have.

## Assumptions behind the 100-broiler example

To avoid an arbitrary kilogram-for-kilogram swap, this example costs the **control and 10% BSFL grower formulations published by Dabbou et al.** The researchers formulated their diets to meet their trial requirements. Maize, soybean meal, oil, minerals and amino acids changed together. [7]

This is a costing exercise, **not a ready-to-mix Zimbabwean recipe**. Local ingredients and premixes require fresh nutritional checks. It does not establish that farm-produced full-fat larvae can replace the partially defatted product used in the study.

The full ingredient price ledger is provided below. With an assumed $20/tonne mixing and handling charge:

- Conventional grower feed costs **$541.68/tonne**.
- The BSFL grower feed costs **$457.432 + 99.950 × P per tonne**, where **P** is the delivered price per kilogram of the specified partially defatted meal.
- At P = $0.60, the BSFL grower feed costs **$517.40/tonne**. At P = $1.20, it costs **$577.37/tonne**.

The $0.60 price is a deliberately favourable scenario, not a verified offer.

## Flock assumptions

Assume 100 chicks start at 0.04 kg and all are sold at 2.04 kg: **200 kg total live-weight gain**. Zero mortality simplifies the illustration; it is not a forecast. At FCR 1.80, feed use is **360 kg**.

Assume starter, grower and finisher account for 10%, 40% and 50% of feed used. Only the grower feed changes. Starter costs $0.55/kg and finisher $0.50/kg in every case. These proportions are budget assumptions, not a feeding schedule.

For example, the conventional cycle-average feed price is:

**(0.10 × $0.55) + (0.40 × $0.541684) + (0.50 × $0.50) = $0.521674/kg.**

| Whole-flock result | Conventional | BSFL at $0.60/kg | BSFL at $1.20/kg | BSFL at $0.60/kg, poorer FCR |
|---|---|---|---|---|
| Whole-cycle FCR, assumed | 1.80 | 1.80 | 1.80 | 1.90 |
| Cycle-average feed price, USD/kg | 0.5217 | 0.5120 | 0.5359 | 0.5120 |
| Total feed, kg | 360 | 360 | 360 | 380 |
| Feed cost, USD | 187.80 | 184.31 | 192.94 | 194.55 |

| Whole-flock result | Conventional | BSFL at $0.60/kg | BSFL at $1.20/kg | BSFL at $0.60/kg, poorer FCR |
|---|---|---|---|---|
| Feed cost/kg live-weight gain, USD | 0.939 | 0.922 | 0.965 | 0.973 |
| Modelled flock profit, USD | 174.20 | 177.69 | 169.06 | 167.45 |

Profit assumes revenue of **100 × 2.04 kg × $3/kg live weight = $612**, less feed and **$250 for all other costs**. That allowance must cover chicks, labour, health, brooding, litter, water, housing costs and selling expenses. It is not a surveyed Zimbabwean cost. Extra days to market, mortality or additional handling would change it.

The favourable BSFL price saves just **$3.50 per flock** at unchanged performance. With FCR worsening to 1.90, the saving disappears. Feed cost per kilogram of gain is the useful comparison; see how to calculate it .

## Break-even calculation

At unchanged performance, solve:

**$457.432 + 99.950 × P = $541.684**

This gives **P ≈ $0.843/kg**. Below that delivered price, the specified BSFL grower feed is cheaper under these assumptions. Above it, the conventional grower feed is cheaper.

With the favourable $0.60 BSFL price, the whole-cycle FCR must stay below approximately **1.834** to retain a feed-cost advantage over the conventional diet at FCR 1.80.

| What changes? | Effect, holding other inputs fixed |
|---|---|
| Soybean meal falls to $0.50/kg | BSFL meal break-even price falls to about $0.710/kg |
| Soybean meal rises to $0.80/kg | BSFL meal break-even price rises to about $1.017/kg |
| Labour, collection or drying adds $10 to the fresh-larvae batch above | Full-fat meal cost rises by about $0.316/kg |
| Harvest falls to 80 kg fresh larvae at the same $35 batch cost and moisture/loss assumptions | Usable meal falls to 25.33 kg; cost rises to about $1.38/kg |

The full-fat production example and the partially defatted feed model are **different products**. Their break-even prices cannot be interchanged. Defatting requires its own yield, processing-cost and oil-revenue calculation.

### Grower-feed ingredient price inputs

Ingredient quantities below are the published grower columns HI0 and HI10 in reference 7; all prices are illustrative USD/kg. The published HI10 quantities sum to 1,000.5 rather than 1,000.0, so every HI10 quantity is divided by **1.0005** before costing one tonne. No ingredient is silently added or removed. This ledger is for reproducing the economics, not for mixing feed.

| Ingredient | HI0, published g/kg | HI10, published g/kg | Assumed USD/kg |
|---|---|---|---|
| Maize | 536.1 | 574.5 | 0.30 |
| Soybean meal | 332.0 | 230.0 | 0.63 |
| BSFL meal | 0 | 100.0 | Variable P |
| Corn gluten meal | 35.0 | 0 | 0.90 |
| Soybean oil | 59.3 | 54.9 | 1.30 |
| Dicalcium phosphate | 4.0 | 8.3 | 0.85 |
| Limestone | 16.7 | 14.8 | 0.12 |
| Salt | 2.3 | 2.3 | 0.20 |
| Sodium bicarbonate | 1.3 | 1.3 | 0.80 |
| DL-methionine | 1.8 | 2.0 | 3.50 |
| L-lysine | 3.8 | 4.2 | 2.00 |
| Threonine | 1.5 | 2.0 | 2.00 |
| Study-specific premix | 5.0 | 5.0 | 3.00 |
| Choline chloride | 0.2 | 0.2 | 1.50 |
| Phytase | 1.0 | 1.0 | 4.00 |

Numerically, g/kg equals kg/tonne. Multiply each normalised quantity by its assumed price and add $20/tonne for mixing and handling. The study-specific premix and additive forms must not be substituted with arbitrary local products. These historical research formulations are not independently validated here against current commercial standards or local ingredient analyses.

All flock calculations use unrounded costs; displayed figures are rounded. FCR changes are hypothetical whole-cycle outcomes, not effects estimated from the cited trial. In the poorer-FCR scenario, feed-phase shares and other expenses are held fixed solely to isolate feed-conversion sensitivity.

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**Need a diet checked? Send your ingredients and targets to the FeedSport nutrition team on WhatsApp +263 77 468 4534 or sales@feedsport.co.zw.**

Figures in this guide are typical values and general ranges. Confirm targets for your animals, genetics and ingredients, and check batch specifications before formulating.