FEED INGREDIENTS

How to read a feed ingredient specification

As-fed or dry matter, typical or batch values, and why the basis matters when you compare feed ingredient suppliers. A practical guide for feed buyers.

By FeedSport Nutrition Team · Published 6 October 2026 · 3 min read

KEY POINTS

- Always check the basis: as-fed and dry-matter values are not comparable.
- A typical specification describes the product in general. A certificate of analysis describes one batch.
- Energy and digestible nutrients are species-specific. Compare pig values with pig values.
- Compare suppliers on cost per unit of the nutrient you are buying, such as cost per kg of protein.

A specification sheet tells you what is in an ingredient. Read carefully, it lets you compare suppliers fairly and formulate with confidence. Read carelessly, it can make a weaker product look like a bargain.

As-fed versus dry matter

This is the most common source of confusion.

- **As-fed** (or "as is") values describe the ingredient as delivered, including its moisture.
- **Dry-matter (DM)** values describe the ingredient with all water removed.

Because dry-matter figures exclude water, they are always higher. To convert:

> Dry-matter value = as-fed value ÷ (DM% ÷ 100)

For example, sorghum at 8.65% crude protein as fed and 88% dry matter contains 8.65 ÷ 0.88 ≈ 9.8% protein on a dry-matter basis. If one supplier quotes DM and another quotes as-fed, the first will look better on paper without being better.

Most pig and poultry formulation is done on an as-fed basis. Most ruminant work uses dry matter. Our product pages state the basis next to each value.

Typical, guaranteed and batch values

- **Typical values** describe the product in general. They are useful for planning and first formulations.
- **Guaranteed values** are minimums or maximums the supplier commits to, for example "protein not less than 44%".
- **A certificate of analysis (CoA)** reports a laboratory analysis of a specific batch.

For high-value or variable ingredients, especially protein meals, ask for the batch CoA and reformulate if the result differs much from the typical value.

The proximate analysis

Most specifications start with the proximate analysis:

Item	What it tells you
Moisture	Water content. Above about 13–14% in grains increases the risk of mould.
Crude protein	Nitrogen × 6.25. A rough measure of protein, not of its quality.
Crude fat (ether extract)	Oil content, a major contributor to energy.
Crude fibre	Hard-to-digest structural material. Higher fibre usually means lower energy for pigs and poultry.
Ash	Total mineral content. High ash in a protein meal can indicate sand or soil.

Energy is species-specific

An ingredient has different energy values for different animals because they digest it differently. A specification may list ME for pigs, AMEn for poultry, and TDN or NE for cattle. Only compare like with like, and use the value for the animal you are feeding.

Amino acids and digestibility

For pigs and poultry, the amino acid profile matters more than crude protein. Look for **digestible** amino acids (SID for pigs, standardised or true digestible for poultry), not only totals. Two soybean meals with the same crude protein can differ in digestible lysine if one was overheated or underheated during processing.

Phosphorus: total versus digestible

Much of the phosphorus in plant ingredients is bound as phytate, which pigs and poultry digest poorly. Specifications for dicalcium phosphate and other mineral sources often list digestible phosphorus (for example STTD phosphorus for pigs) as well as total phosphorus. Formulate on the digestible figure.

Comparing suppliers fairly

Compare the price of the nutrient you are buying, not the price of the bag. For protein meals:

> Cost per kg of protein = price per kg ÷ (crude protein% ÷ 100)

With illustrative prices, a 46% protein meal at US0.60/kg costs about US1.30 per kg of protein. A 33% protein meal at US0.40/kg costs about US1.21 per kg of protein. The cheaper bag here is also slightly cheaper protein. But the 33% meal brings more fibre and less energy, which you then have to make up elsewhere in the diet. A formulation tool shows the full effect on diet cost.

Questions to ask your supplier

1. Are these values as-fed or dry matter?
2. Are they typical, guaranteed or from a batch analysis?
3. Which reference or laboratory produced them?
4. Can you supply a certificate of analysis for this batch?
5. Have mycotoxins (especially aflatoxin) been tested for grains and oilseed meals?

We publish typical specifications for every ingredient we sell and can supply batch documentation on request.

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.