



GUIDE TO USING ALTERNATIVE FEEDSTUFFS

WITH LIMITED SUPPLY AND INCREASING COST OF FEEDSTUFFS TRADITIONALLY USED IN FEEDLOT RATIONS CAUSED BY DROUGHT CONDITIONS, THERE IS GROWING INTEREST IN MAKING GREATER USE OF ALTERNATIVES FEEDSTUFFS.

WHAT ARE ALTERNATIVE FEEDSTUFFS

Alternative feedstuffs are co- and by-products from food and/or forage production systems. Examples may include almond hulls, citrus pulp, sugar cane tops and brewers' grain and only become cost effective when traditional feedstuff supply is limited and become cost prohibitive.

Alternative feedstuffs often lack nutrient density and can sometimes be high in moisture, and so it is important to understand how to evaluate and use them. This guide outlines some important factors in evaluating use of alternative feedstuffs in times of drought.

EVALUATING NUTRITIONAL VALUE OF ALTERNATIVE FEEDSTUFFS

The value of alternative feedstuffs is best determined on a dry matter and nutrient cost basis. This ensures moisture content is accounted for and the alternative feedstuff can be compared against the known value of the traditional feedstuff.

Dry matter is the proportion of a feedstuff remaining after removal of moisture (i.e. water). For example, wheat is delivered with 12% moisture, so each tonne of wheat contains 880kg of dry matter. The moisture content of different feedstuffs can vary greatly. Water has no nutrient value, but directly influences the weight of a feedstuff (1 Litre of water = 1kg). The nutrient content of feedstuffs is expressed on a dry matter basis, adjusting for dry matter allows for comparison of different feedstuffs.

CALCULATING EQUIVALENCE

For example, if wheat at 12% moisture and 13.5 MJ/kg ME costs \$480/t landed feedlot, what is the maximum cost of brewers' grain with 80% moisture and 11.8 MJ/kg ME?

1. Convert wheat cost to a dry matter value = $480 / 88\% = \$545/\text{t DM}$
2. Express wheat cost on a ME basis = $545 / 13.5 = \$40.37/\text{MJ ME DM}$
3. Convert ME cost for wheat to brewers' grain value = $40.37 \times 11.8 = \$476/\text{t DM}$
4. Convert cost from dry matter to as fed = $476 \times 20\% = \$95.20/\text{tonne}$

In this example, the equivalent cost of brewers' grain on a ME basis when wheat costs \$480/t is \$95/tonne. The same method can be applied to other key nutrients, such as fibre (Neutral detergent fibre, NDF%) or protein (Crude protein%) to determine equivalent values.

OTHER FACTORS TO CONSIDER

Other production considerations related to use of alternative feedstuffs include:

Shrink (loss)

Alternative feedstuffs with high moisture content (greater than 65%) can suffer from increased shrink (up to 30%). Shrink is usually associated with seepage, evaporation and degradation. Shrink can be reduced by ensuring adequate turn-over (within 7 to 14 days). Shrink requires replacement and therefore should be included in the purchase cost. For example, brewers' grain at say \$80/t and a 20% expected shrink has a corrected purchase value of say \$64/tonne.

Consistency

Alternative feedstuffs are often by-products of other processes and thereby lack consistency in relation to supply, physical characteristics (particle size, moisture content) and nutrient content.

Inclusion limitations

Inclusion of alternative feedstuffs can be limited due to high moisture content and effect on final ration dry matter (no lower than 65%), avoid excessive nutrient intake (sulphur, sodium) and influence on feed intake (dietary fat greater than 7.2%, shelf life, palatability).



RESIDUE RISK CONSIDERATION

A critical requirement for use of alternative feedstuffs is to ensure they do not pose a risk of chemical residue within meat and offal.

Users cannot assume a feedstuff derived from another fibre/food process is safe for feeding. Some chemicals registered for use in agriculture and fibre/food industries are not registered for use on stockfeed or livestock. Consequently, there may be no maximum residue limit (MRL) set for chemicals in meat/offal. If a chemical has no meat/offal MRL, then any detectable level of that chemical breaches food standards.

In addition, it is important to note that contamination of feedstuffs with undesirable compounds can sometimes occur prior to delivery, including as part of the production process, during transfer, storage and transport.

Risk mitigation – always ask for a Commodity Vendor Declaration

Completion and provision of a by-product or Commodity Vendor Declaration (CVD) provides confidence to a feedlot that the feedstuff is safe to use. Requesting a CVD also educates suppliers of these alternatives that their actions have implications to others and the broader meat and livestock industry and its global reputation.



[Download the SAFEMEAT Commodity Vendor Declaration here.](#)

SAFEMEAT Risk Assessments of Supplementary feeds and by-product feeds

ALFA would like to draw your attention to information on the SAFEMEAT website regarding the residue risk profiles of a range of supplementary feeds and by-product feeds for livestock. This information is considered the most up to date available, however you should check the SAFEMEAT website for updates.

SAFEMEAT provides risk assessment documents for various alternate fodders as follows:

Almond Hulls	↓ Full version	↓ Summary version
Apple Pomace	↓ Full version	↓ Summary version
Avocado/Mango waste	↓ Full version	↓ Summary version
Banana Culls	↓ Full version	↓ Summary version
Cereal Forage Hay	↓ Full version	↓ Summary version
Cereal Grain	↓ Full version	↓ Summary version
Citrus Pulp	↓ Full version	↓ Summary version
Grape Pomace	↓ Full version	↓ Summary version
Oilseed Forage Hay	↓ Full version	↓ Summary version
Oilseed Grain	↓ Full version	↓ Summary version
Pasture	↓ Full version	↓ Summary version
Peanut Forage Hay	↓ Full version	↓ Summary version
Pineapple Forage	↓ Full version	↓ Summary version
Pulse Grain	↓ Full version	↓ Summary version
Pulse Legume Forage	↓ Full version	↓ Summary version
Sugarcane Tops Trash	↓ Full version	↓ Summary version
Vegetable Waste	↓ Full version	↓ Summary version

ALFA would like to thank Dr. Rob Lawrence from Integrated Animal Production for his assistance in providing information contained in this document.



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