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Most successful feedlot additives

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This issue examines six additives and functional ingredients commonly used in feedlot nutrition, explaining their practical value and the limits of the evidence supporting them.

Feedlot cattle receive no shortage of products promising better performance, health, or carcass value. Some become regular components of commercial rations because they solve a practical problem, offer a reasonable return, or make feeding programs easier to manage. Their contribution does not always appear as additional live weight. Some improve feed efficiency, others support rumen stability or protect feed quality, and still others improve ration handling and the uniform delivery of smaller ingredients.

The following list reflects my own work with feedlots, feed manufacturers, additive suppliers, and technical teams. It is deliberately field-based and therefore subjective, rather than a comprehensive ranking. Inclusion does not mean that every product is required in every ration. Availability, regulatory approval, diet composition, cattle type, management, and economics determine whether an additive belongs in a particular program. Products within the same category may also differ substantially. The practical question is what each product can contribute under the conditions in which it will be fed, and whether that contribution justifies its cost. A useful recommendation should also state what would justify continuing, adjusting, or stopping the product after introduction.

Ionophores set the standard

If poultry have phytase, feedlot cattle have ionophores. Monensin, lasalocid, and laidlomycin alter rumen fermentation and can improve weight gain or feed efficiency, depending on the compound and feeding situation. Approved claims differ by product and cattle class; certain labels also include prevention and control of coccidiosis. U.S. extension reviews document widespread use in commercial feedlots. Local approval and label directions must guide inclusion. Mixing errors can poison cattle, and correctly mixed cattle feed containing monensin can be lethal to horses.

Yeast responses vary by product

Yeast is an established category, although the term covers several different materials. Live yeast products are generally intended to support a more stable rumen environment, whereas cultures, fermentation products, and cell-wall fractions have different proposed functions. Results in finishing cattle are less consistent than those obtained with ionophores. A useful trial must match the product, diet, and feeding situation under consideration. Improved rumen measurements alone do not establish better gain, feed conversion, or financial return. Evidence from one product cannot automatically be transferred to another.

Buffers have a specific role
High-concentrate diets increase the risk of low rumen pH, but buffers cannot replace sound adaptation, adequate effective roughage, accurate mixing, and consistent bunk management. Sodium bicarbonate and alkalizing agents may be useful with rapidly fermentable grains, but responses vary. Magnesium oxide is more accurately described as an alkalizing agent than a true buffer, while limestone is primarily a calcium source and a weak buffer. Raising rumen pH does not necessarily improve performance enough to cover the cost. Routine inclusion may leave the cause of acidosis unaddressed.

Mycotoxin products require evidence
Feedlot diets may contain several grains and byproducts, creating multiple routes for mycotoxin exposure. Mitigation products may help when evidence supports the particular product and toxin involved. No clay, yeast fraction, or blend should be assumed to control every mycotoxin. Some bentonites bind aflatoxin, but laboratory binding alone does not establish protection in cattle. Testing ingredients, observing applicable limits, and rejecting or segregating unsuitable feed remain the first lines of control. Product approval and permitted claims also vary by country. Mitigation does not make otherwise unacceptable feed suitable for use.

Molasses remains practical
Molasses is technically a feed ingredient, but it performs several additive-like jobs. It supplies rapidly fermentable carbohydrate, improves palatability, reduces dust, helps small particles adhere to the ration, and can carry minerals or other additives. Its value is clear in dry, finely processed rations where sorting or uneven additive intake is a concern. Local price, availability, storage, and handling determine practicality. Excess inclusion can create mixing problems and supply too much fermentable sugar. At sensible levels, it remains one of the simplest feedlot tools.

Trace mineral source matters
Organic and hydroxy sources of certain trace minerals offer alternatives to conventional sulfates and oxides. Potential advantages include improved stability or bioavailability under particular conditions, but these depend on the mineral and source. Selection may help manage specific antagonisms; it does not remove the need to correct excessive sulfur in feed or water. Receiving-cattle results should not automatically be applied to finishing cattle. Total supply, background concentrations, legal limits, and antagonists must be evaluated before paying a premium. The relevant comparison is between adequately supplemented diets, with any extra cost justified by a demonstrated benefit.

In Brief, these six categories reflect practical experience with feedlot nutrition, with differing levels of scientific support. Ionophores remain the clearest commercial success within this selection. Yeast products, buffers, mycotoxin-mitigation products, molasses, and selected trace mineral sources earn their place when their contribution to a particular feeding program justifies their cost.

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