



NUTRITION NOTES

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CORN PROCESSING AND MOISTURE FOR FEEDLOT CATTLE

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Over the years there has been a lot of debate about how much to process corn and at what moisture to feed it to optimize feedlot performance. The answer depends to some degree on what makes up the rest of the diet. I have compiled several studies for your review, that try to answer these questions. We can get hung up on too many details, so I think if we remember a few rules, we can do a good job of advising our customers.

For purposes of brevity in the tables, the following abbreviations may be helpful: DRC=dry rolled corn; RHMC=rolled high-moisture corn; GHMC=ground high-moisture corn; FGC=fine ground corn.

In general, the higher the level of corn in the diet, the less benefit there is to processing. The ultimate example of this is our Precision Dairy Beef/shelled corn program. Shown below are two tables that show benefits or lack thereof to processing corn when feeding 75-80% corn in the ration. For reference, remember a hog diet is ground to approximately 700 microns.

1996 Owens (OSU)

	Fine (1550 mic)	Coarse (3100 mic)	Whole (5700 mic)
ADG lb/day	3.18	3.53	3.38
F/G lb feed/100 lb gain	591	568	527

2007 Loerch (OSU)

	Whole	DRC
ADG	3.20	3.20
F/G	595	657

You see, performance for whole corn can be as good or better than processed corn. This is most likely due to less subclinical acidosis when feeding whole corn. Now let's evaluate an example with processed dry or high-moisture corn.

U of NE 30% Wet Gluten Feed (dry matter basis)

	Whole	DRC	HMC
ADG	3.85	4.05	3.89
F/G	607	568	546

As you can see, the best ADG was for the dry rolled corn, but we got the best feed conversion with the high-moisture corn. Remember, the high-moisture corn was processed and packed into a bunker. So we are actually seeing the effect of processing and the moisture effect. However, sometimes with high-moisture corn, we may see slightly lower intakes because the starch is "hotter" in the high-moisture corn.

We could evaluate hundreds more trials, but I think these illustrate the point I am trying to make. If you think about the following points, you can probably help your producers make better grain harvesting and feeding decisions.

1. The higher % of corn in the diet, the less advantage to processing corn.
2. In "ALL CORN" diets, whole corn may actually give superior performance and conversions to processed corn.
3. The higher % of ethanol by products, the more response to processing corn.
4. If you put up high-moisture corn, a coarse grind (such as a tub grinder) is an adequate amount of processing.
5. Remember, the corn in earlage is also processed and high moisture.
6. With today's ingredient costs, you can probably afford about 15¢/bushel to process.
7. In byproduct and dry roughage rations, there are probably some mixing benefits to using processed corn as opposed to whole corn.

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