BEEF CATTLE

DISTILLERS GRAINS WITH SOLUBLES (DGS)

Distillers grains, a co-product of the ethanol distilling industry, are the fastest growing feed ingredient in the United States. Its use is increasing, being widely used both wet and dry, in growing and finishing steer direct feeding and mixed rations. DGS use in beef cattle feeds has been thoroughly researched over 50 years in a number of university studies and has consistently shown the following outstanding feed values for beef cattle:

1. Higher energy value than corn - 120-130% when fed wet or dry at 15-40% dry matter.
2. DDGS protein is 180% the value of soybean protein for growing steers due to its higher by-pass protein content.
3. Free of starch - thereby reduces potential of high energy rations to cause subacute acidosis (lowers feed consumption due to low rumen pH).
4. Lower cost protein content (28-30% crude) and readily available phosphorus 0.83% which reduces feed costs.
5. Universities of Nebraska, Iowa and Illinois research has consistently shown equal or better feed vs. gain results, and yield grades of carcasses have been equal or better when distillers grains has been a significant portion (15-40% dry matter) of the ration.
6. Highly digestible fiber (40-45% NDF) plus dried yeast cells (3-5%) stimulates rumen fiber digestion.

AVAILABILITY

Both wet (WDS) and dried (DDGS) distillers grains are now readily available from more than 80 dry mill ethanol distilleries in the United States and Canada and availability is continuing to grow. The most predominant grain utilized by the distilleries is corn with some using sorghum when economical. It is most advantageous for distilleries to sell wet (30-35% dry basis) or partially dried (45-50% solids) DGS since this reduces drying costs, increases production capability and reduces environmental control requirements. Although this significantly reduces WDGS product costs, the costs related to truck transportation of water (50-70%) and shorter shelf (2-4 weeks) must be considered. However, the shelf life can be extended by feed approved additives (i.e. propionic acid), silage bags (plastic) or preventing exposure to air similar to handling corn silage. The dried product (DDGS) (8-12% moisture) is quite stable under ambient conditions when tightly covered and is being economically transported long distances by truck, rail, barge and ocean freighter. The distilleries also have available condensed distillers solubles (CDS) approximately 30% solids. These liquid syrups are increasingly being used in liquid feeds and blended in dry feeds up to 10% dry basis as a readily available source of nitrogen and energy. Distillers grains, wet or dry, are largely identified and labeled (AAFCO) by the predominant whole grain from which they are made, i.e. corn DDGS, sorghum DDGS, or other grains (wheat, barley or rye). Information and sources of supply are available from Distillers Grains Technology Council (DGTC), whose members produce consistent high quality products.

CATTLE FEEDING STUDIES

For over 80 years, both wet and dried distillers grains in numerous beef cattle feeding studies have shown it to be a lower cost and more efficient feed ingredient. Examples of recent studies: Dr. Allen Trenkle, Iowa State University, stated at the November 2003 Iowa Corn Promotion Board meeting that in his distillers grains feeding studies "wet or dry DDGS can be fed to dairy beef steers without affecting performance or carcass value. Depending on relative prices of DDGS, corn and protein supplement, feeding DDGS can reduce feed cost of grain." C.B. Rincker and L.L. Berger, 2003, University of Illinois, Holstein finishing steers fed a 50% dry basis wet DGS in a corn-corn silage ration substituted for soybean meal was the most efficient, feed:gain 5.68 vs. 5.93, increasing potential profit per head 53.3%, with equal carcass grading value. The growing steers had the lowest feed:gain 4.36 vs. 4.46 when started on 20% WDS and increased to 37.5% WDS. Klopfenstein, University of Nebraska (1996 publication) calves and yearling steers fed 40% dry basis wet DGS in a rolled corn ration resulted in lower feed:gain (5.65 vs. 6.45) and 134% more energy value for calves plus lower feed:gain (5.78 vs. 6.94) and 151% more energy value for yearlings. In another experiment, yearlings feed a corn silage, alfalfa hay, molasses and 40% dry basis wet vs. dry distillers ration, resulted in more energy value 154% for wet and 130% for dry than corn.

NUTRIENT	TYPICAL VALUE (D.B.)
Dry Matter, DDGS, %	91.0
Dry Matter, WDS, %	30.0
Protein, Crude, %	28.0
Bypass Protein, %	55.0
Fat, %	9.0
NDF, %	44.0
Phosphorus, %	0.83

FEEDING DISTILLERS GRAINS

Distillers grains from the same production facility are a consistent, high protein concentrate and low cost (approximately 1/2 price soybean meal) feed ingredient that cattle find very palatable and immediately finds its place in least cost feeding rations. Possible usage rates depend upon achieving nutritionally balanced formulas, but typically 20-40% on a dry basis of wet or dry distillers grains with solubles will minimize cost and maximize growth and weight gain. Distillers grains is especially effective in replacing high starch grains, like corn, to increase ration energy value, higher protein level and reducing potential subacute rumen acidosis problems. Potential uses are as supplement for cattle on pasture or high forage rations typically low on phosphorus, growing calves, and as an ingredient in high energy feed lot rations.

For more information on feed applications, nutritional references and supply sources, please contact: Distillers Grains Technology Council, University of Louisville, Lutz Hall Room 435, Louisville, Kentucky 40292, 800-759-3448 or 502-852-1575, 502-852-1577 (Fax). Or visit our web site at: www.distillersgrains.org

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