

DAIRY CATTLE

DISTILLERS DRIED GRAINS WITH SOLUBLES (DDGS)

LOW COST, HIGH PROTEIN, HIGH ENERGY FEEDSTUFF

Distillers grains provides a unique and nutritious feed ingredient for the high milk producing dairy cow. To achieve and maintain high milk production requires feeding high bypass protein, digestible fiber and fat ingredients like distillers grains. This results in outstanding feeding values for dairy cattle:

1. High Protein (26-28%) and High Energy (0.92 NEI, Mcal/lb) - components that cows need for higher milk production.
2. Bypass Protein (55% of crude protein) - increased utilization of protein that increases milk production plus lower cost than soybean meal.
3. Starch Removed - reduces potential of high energy rations to cause acidosis (lower feed consumption due to low rumen pH).
4. Yeast Fermentation - product contains dried yeast cells (3-5%) that provides B vitamins and promotes palatability and increased feed consumption.
5. Highly Digestible Fiber (44% NDF) - increased nutrition, energy and stimulates rumen micro-organisms that improve fiber digestion.
6. Methionine Advantage - higher methionine content offers opportunity to blend with lower methionine soybean meal for a more balanced feed.
7. Unsaturated Fat Content (9%) - typically readily digestible corn oil.
8. Organic Phosphorous Content (0.7-0.9%) - a readily available low cost source of phosphorous for dairy cattle.

AVAILABILITY

Dried distillers grains with solubles (DDGS) is the most common commercial co-product of the ethanol producing dry mill distilleries. This feed ingredient is readily available in that approximately five million tons are produced yearly. After the distillery removes all the ethanol, the residual grain solubles and insoluble portion are dried enabling complete recovery; and thereby, there is three times concentration of protein, fat, fiber, etc. of the original whole grain without the starch. Yeast cells from the fermentation are also dried in the final product. The DDGS are identified by the type of natural whole grain from which they are made, i.e. corn DDGS, milo DDGS or other grains (wheat or rye). DDGS are available by truck, railroad car or barge year round. Information and sources of supply are available from Distillers Grains Technology Council (DGTC), whose members produce consistent high quality products.

NUTRITIONAL BENEFITS

For over 100 years university studies (J.L. Hills, Vermont Agricultural Experiment Station Reports 1895-1903) have repeatedly shown that DDGS increases milk production. In 1970, Dr. R.G. Warner, Cornell University (Proc. Distillers Feed Research Council 25:11) summarized 14 of their feeding experiments with distillers grains utilizing over 150 cows as follows: "In no experiment has a test feed produced more FCM (fat corrected milk) than distillers feeds under study." In 1982, D.L. Palmquist and H.R. Conrad, Ohio Agricultural Research and Development Center (J. Dairy Science 65: 1729-1733) state that "In Jerseys, DDGS tended to increase both milk and fat production so that FCM per metabolic body size was increased significantly." G. Aines, T. Klopfenstein, R. Stock (Neb. Coop. Ex. MPSI, 1986) state "The combination of bypass protein, digestible fiber and fat in DDGS make it a highly desirable feed for dairy cows." Therefore, over a long history of positive test results and testimonials for DDGS has proven it to have the nutritional benefits required for the high producing milk cow. Typical analysis of DDGS:

| <u>NUTRIENT</u> | <u>TYPICAL VALUE</u> |
|------------------------|----------------------|
| Dry Matter, %..... | 91.0 |
| Crude Protein, %..... | 27.0 |
| Bypass Protein, %..... | 55.0 |
| Fat, %..... | 9.0 |
| NDF, %..... | 44.0 |
| Lysine, %..... | 0.70 |
| Methionine, %..... | 0.60 |
| NEI, Mcal/lb, %..... | 0.92 |
| ME, Mcal/lb..... | 1.37 |

FEEDING DISTILLERS GRAINS

Distillers grains is a consistent, high quality and low cost (nearly 1/2 price soybean meal) feed ingredient that immediately finds its place in least cost feeding rations. It is free flowing and easily stored, conveyed and used in total rations. Possible usage rates depend upon achieving nutritionally balanced formulas, but typically up to 15-25%DM or 10 -15 lbs/cow/day will maximize performance. Distillers Grains is especially effective in replacing high starch grains, like corn, to maintain high energy, protein and reduce potential rumen acidosis problems. Combinations of soybean and/or cottonseed meal with distillers grains improves rations nutritionally and increases palatability for increased feed consumption.

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

