



Meta-Analysis Of Feedlot Trials Replacing Corn With Wet Distillers Grains Plus Solubles (WDGS)

A meta-analysis is a statistical procedure to combine a number of existing studies. Through such a procedure, effects which are hard or impossible to discern in the original studies can be made visible, as the meta-analysis is equivalent to a single study with the combined size of all original studies. A weakness of the method is that problems with any of the studies will affect the result of the meta-analysis, so a good meta-analysis of bad studies will still result in bad data.

The University of Nebraska (2008 Nebraska Beef Report) did a meta-analysis. The objective of the analysis was to evaluate the effect of WDGS dietary inclusion level of diets containing dry-rolled or high-moisture corn on feedlot cattle performance and carcass characteristics. Treatment means from University of Nebraska research feedlot experiments evaluating the use of WDGS in finishing diets were compiled. Steers (1,257 head) in these studies were

predominantly black, crossbred steer calves or yearlings. Only studies that replaced dry-rolled corn, high-moisture corn, or a combination of the two types of corn with corn WDGS (0% to 50% of diet DM) were included in the analysis. All finishing diets contained 5% to 7.5% roughage (DM basis). Steers in these experiments were fed for 99 to 168 days.

Replacement of grain with WDGS consistently improved F:G. The feeding value of WDGS was consistently higher than corn and suggests a 30% improvement in feeding value when WDGS replaced 15% to 40% of the diet dry matter. Feed:Gain, ADG, marbling score, and fat thickness responded quadratically as WDGS inclusion increased. In most cases, performance and carcass characteristics improved up to 30% to 40%, then gradually decreased. Feeding WDGS up to 40% of diet DM improved performance and quality grade.

Finishing Steer Performance When Fed Different Inclusions Of Wet Distillers Grains Plus Solubles (WDGS)

WDGS Inclusion ^a	0% WDGS	10% WDGS	20% WDGS	30% WDGS	40% WDGS	50% WDGS	Lin ^b	Quad ^b	Cubic ^b
DMI, lb/day	22.3	22.7	22.8	22.5	21.8	20.8	0.01	0.01	0.75
ADG, lb	3.47	3.70	3.83	3.87	3.81	3.66	<0.01	<0.01	0.30
F:G	6.44	6.16	5.95	5.81	5.74	5.73	<0.01	0.09	0.39
12th rib fat, in	0.49	0.54	0.55	0.53	0.52	0.55	<0.01	0.04	0.06
Marbling score ^c	518	528	533	532	526	514	0.05	0.05	0.36
Feeding value, % ^d	100	155	131	130	131	113	0.01	0.03	0.05

^aDietary treatment levels (DM basis) of wet distillers grains plus solubles.

^bEstimation equation linear, quadratic, and cubic term t-statistic for variable of interest response to WDGS level.

^c500 = small0.

^dPercent of corn feeding value, calculated from individual trial treatment mean feed conversion relative to individual trial 0% WDGS feed conversion, divided by WDGS inclusion.

(continued)

