



D2Dx™ Immunity Test

A Chute-Site Test to Identify Feeder Calves with the Best Immune Health and the Most Average Daily Gain

Introduction

A balanced immune system is important for the health and productivity of farm animals. Studies by scientists have shown that animals with good immune functions are less prone to diseases, healthier and more productive. In both humans and animals, two types of immune responses co-exist in the immune system: Th1 (T helper 1) and Th2 (T helper 2) responses. There is an inverse relation between Th1 and Th2 immunity: when one is stronger, the other is weaker. Maintaining a balanced Th1/Th2 immunity is important for cattle health and productivity.

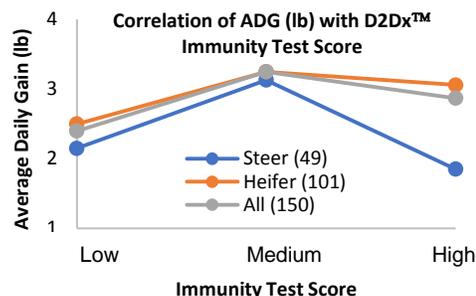
D2Dx™ is a blood test that measures the Th1/Th2 immunity balance from an animal. When the D2Dx™ test score is too high or too low, it suggests an unbalanced Th1/Th2 immune activity and underlying health risks in the animal. Together with other tests and evaluations, D2Dx™ immunity test can potentially help cattle owners identify cattle with the best immune health, less health risk, and the best productivity.

Study Finding 1 – Feeder calves with medium D2Dx™ immunity test scores have the best weight gain in feedlot

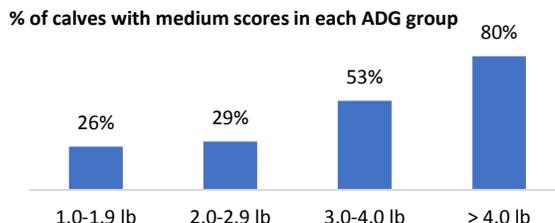
A study was conducted at a feedlot on 150 calves at the age of 6-8 months old. The calves were tested upon arrival at the feedlot using the D2Dx™ immunity test and identified as having high, medium, or low test scores. 50 days later, the calves were weighed, and the average daily gain (ADG in lb) was calculated. Figure 1 is the average ADG of calf groups with low, medium and high test scores. In Figure 2, the percentage of calves with the medium test score among all calves in each ADG group (1.0-1.9 lb, 2.0-2.9 lb, 3.0-4.0 lb, and above 4.0 lb) was calculated.

- Calves with medium scores have the highest ADG;
- For steers, the difference in ADG between medium and high score group is about **1.2 lb per calf**;
- When steers and heifers are combined together, the medium test score group's ADG is about **0.8 lb per calf** above the other two groups;
- For calves in the highest ADG group (above 4 lb per calf), 80% of the calves in the group have medium D2Dx™ immunity test scores.

Feeder calves with medium D2Dx™ immunity test scores have the best average daily gain ADG (lb).



Higher ADG groups have a larger percentage of calves with medium D2Dx™ immunity test scores.



Study Finding 2 – Chute-site testing (3 minute) results are highly correlative to non- chute-site testing results

The D2Dx™ test can be performed at the chute-site or non-chute site. The two test scores are highly correlative to each other. D2Dx™ test may be conducted at the chute-site or in a different location after all samples are collected.

Chute-site versus non-chute site correlation

