

ACTIVITY AND RUMINATION OF IMPLANTED BRITISH × CONTINENTAL STEERS VS. NON-HORMONE TREATED COUNTERPARTS CONSUMING VARIOUS LEVELS OF ROUGHAGE THROUGHOUT A 361-D GROWTH WINDOW

S. L. Pillmore^{* 1}, T. J. Kirkpatrick¹, K. Wesley¹, K. B. Cooper¹, F. Francis¹, T. Tennant¹, W. Nichols², J. Hutcheson², T. Lawrence¹

¹Department of Agricultural Sciences, West Texas A&M University, Canyon, ²Technical Services, Merck Animal Health, Madison, NJ, United States



INTRODUCTION

Locomotive and behavioral characteristics are important producers and researchers can use to identify:

FEEDING EVENTS | **HEALTH EVENTS** | **PAIN & STRESS** | **REPRODUCTIVE EVENTS**

>92% of fed cattle receive one or more growth promoting implants prior to harvest.

- Understanding relationships between animal behavior, growth promoting implants and feeding duration will allow producers to adjust management practices appropriately.

OBJECTIVE:

To objectively quantify rumination and activity as the animal grows and transitions through various feedlot diets in implanted and non implanted steers

MATERIALS & METHODS

80 Charolais × Angus Steers (271 ± 99 lb) | Balanced Incomplete Block Design | 378-d feeding duration
E. U. = Steer | Block = Pair | GLIMMIX | Repeated Measures

TREATMENTS & EXPERIMENTAL DESIGN

CON vs. **REV** × **DOF**

No growth promoting implant

Steers received Revalor-XS on d 0 and d 190

4 CON/4 REV harvested on: d 0, 42, 84, 126, 168, 210, 294, 336, 378 DOF

ALLFLEX ESENSE FLEX ACCELEROMETER EAR TAG (SCR ENGINEERS LTD, NETANYA, ISREAL)



ACCELEROMETER MONITORED: ACTIVITY | RUMINATION

ACTIVITY AND RUMINATION DATA WERE ANALYZED IN RESPONSE TO:

Feeding Duration (361-d) | Diurnal Cycle (24-h cycle) | Roughage Inclusion (38.5, 23 and 8.5%)

RESULTS

DIURNAL CYCLE

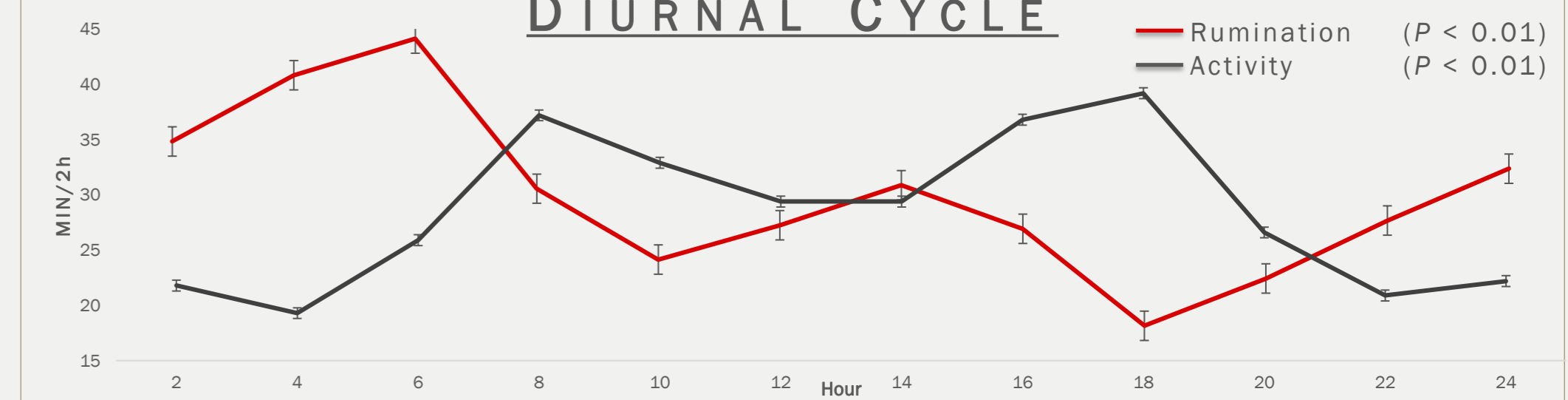


Figure 1. Diurnal (24-h) activity and rumination time (min) of implanted and non-implanted Charolais × Angus steers.

ROUGHAGE INCLUSION

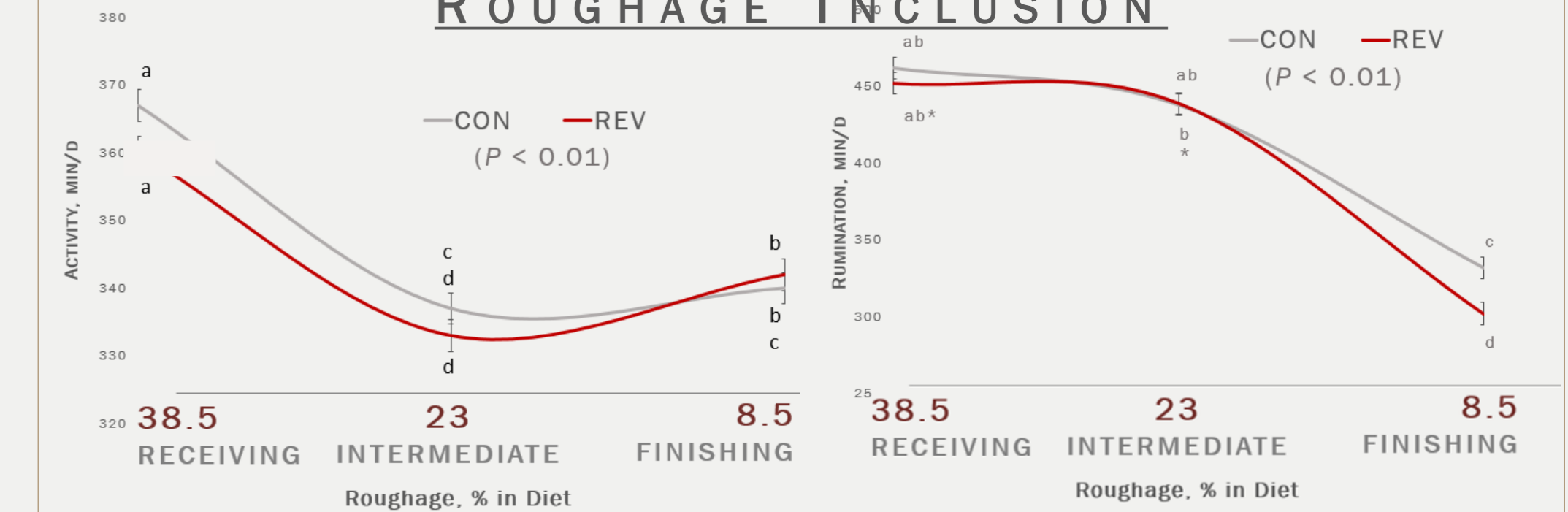


Figure 2. Animal activity and rumination in response to roughage level through transitioning from a receiving (38.5%), intermediate (23%) and finishing (8.5%) diet.

DAILY ACTIVITY

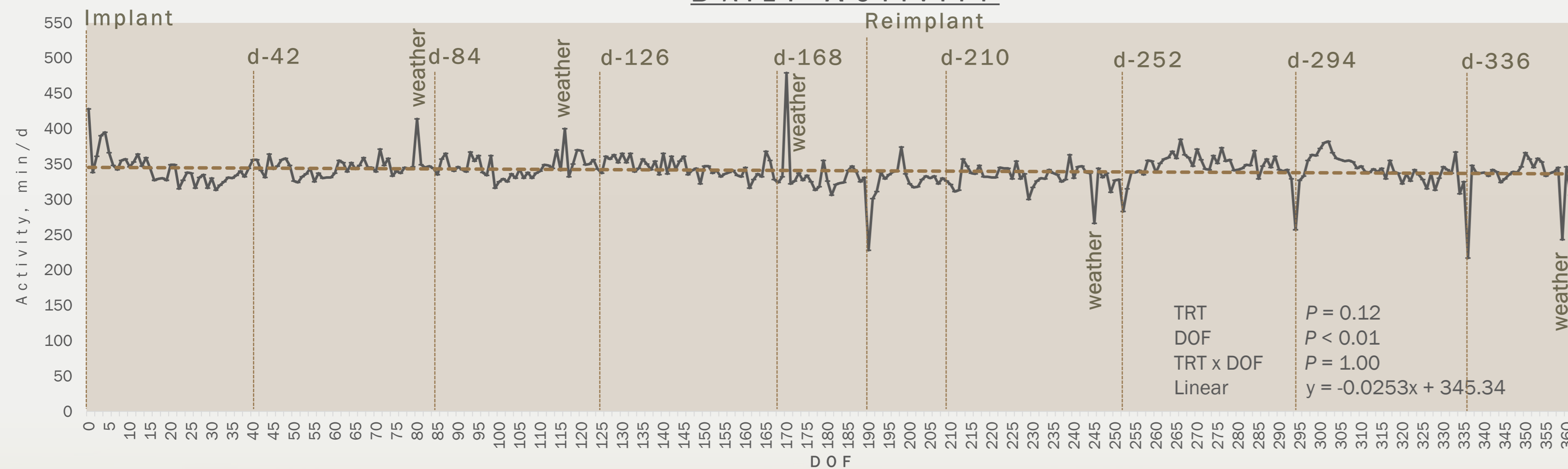


Figure 3. Daily activity time (min) of Charolais × Angus steers across a 361-d feeding duration, with accounted weather events and processing days.

DAILY RUMINATION

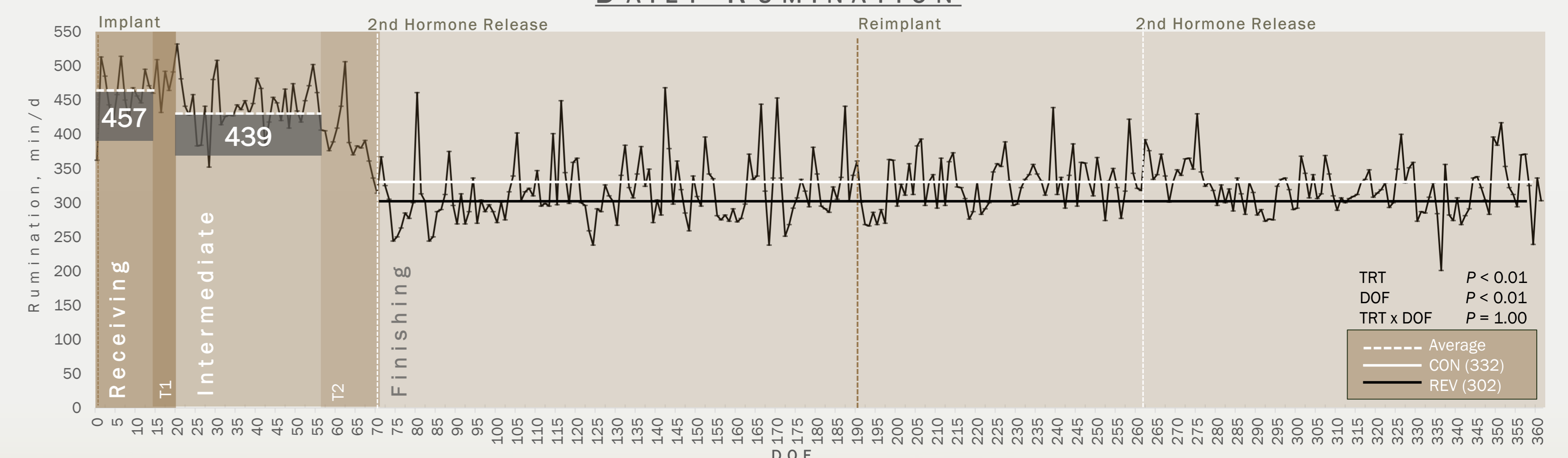


Figure 4. Daily rumination time (min) of implanted and non-implanted Charolais × Angus steers across a 361-d feeding duration with accounted dietary transitions and hormone release.

CONCLUSIONS & IMPACT

BIMODAL DIURNAL RHYTHM

ACTIVITY AND RUMINATION WAS HIGHEST UPON CONSUMPTION OF THE HIGHEST AMOUNT OF ROUGHAGE

IMPLANT REDUCED RUMINATION

