

LIVESTOCK

Cattle transitioning to wheat require acclimation period

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One scenario

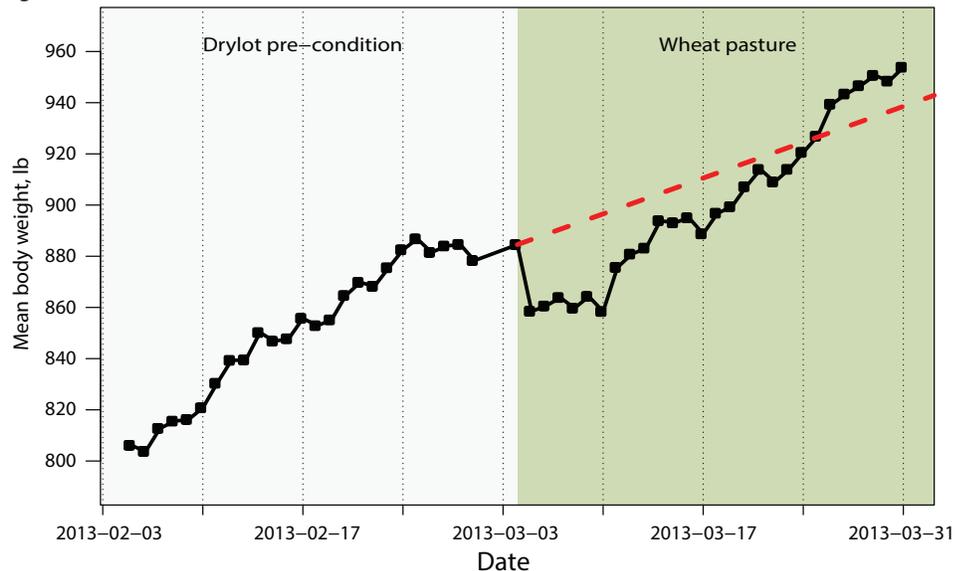
that producers may be faced with in cool-season stocker cattle production is whether or not to continue grazing with a set of cattle through graze-out or to sell these cattle and replace them with lighter calves. An observation that has been made when turning cattle out on lush wheat pastures



is that a transition occurs in which cattle may only maintain or even lose weight for a period of time. We also observed this in calves at the Noble Foundation following wheat pasture turnout in 2013.

Figure 1 shows daily weight data collected using a GrowSafe Beef system. This data shows that it took 10 days after turnout for the cattle to reach their original turnout weight. The red line in the figure depicts what the daily body weight would be if the cattle were gaining 2 pounds per day. It shows that it took 21 days for the cattle to reach an overall growth rate of 2 pounds per day. Before Day 21, overall performance was less than this, and after Day 21, ►

Figure 1



overall performance was greater than 2 pounds per day.

An interesting question is, “Do cattle that have been grazing wheat gain better than cattle that have not been grazing wheat?” Figure 1 shows that during the first 21 days following turnout in this situation, overall performance is poor but improving. The more appropriate question may be, “Will a difference in performance be maintained and, if so, for how long?”

To help address this question, consider a case study performed by researchers with the U.S. Department of Agriculture – Agricultural Research Service (USDA-ARS) Grazinglands Research Laboratory in El Reno, Oklahoma. In the fall and spring of two consecutive years, cattle weighing approximately 550 pounds (fall season) and 700 pounds (spring season) were received for 28 days and fed free choice hay plus 2 percent of body weight of a mixed ration estimated to result in gains of 2 pounds per day. After the receiving period, half of the cattle were turned out on wheat pasture and half were kept in a dry lot on the same ration. All cattle were weighed on Day 0, 14 and 28. In the fall, cattle turned out on wheat lost 0.27 pounds per day from Day 0 to 14 and gained 2.88 pounds per day from Day 14 to 28. This resulted in an average daily gain of 1.3 pounds per day from Day 0 to 28. Cattle kept in a dry lot gained 2.15 pounds per day from

Day 0 to 28. Cattle on wheat pasture were then brought back to the dry lot, fed the same receiving ration for five days; then, both sets of cattle were turned out on wheat pasture for 98 and 75 days in Year 1 and 2; respectively. This resulted in a group that was considered “adapted” to wheat forage and a group considered to be “unadapted.” Unadapted calves gained 2.29 pounds per day, while adapted calves gained 2.64 pounds per day.

This data suggests there is a difference in average daily gain that should be accounted for, if the current set of calves is sold and replaced. However, cattle subjected to this protocol in the spring exhibited different results. They demonstrated a shorter acclimation period to grazing wheat. Cattle grazing wheat gained 1.48 pounds per day from Day 0 to 14 and 4.43 pounds per day from Day 14 to 28. This resulted in an average daily gain of 2.95 pounds per day from Day 0 to 28, much better than the average daily gain of 1.3 pounds observed in the fall cattle. No comparisons were made past 28 days as was done in the fall phase. The authors suggested that this difference may be seen due to changes in chemical composition of the forage from fall to spring. One confounding factor is the difference in weight. Cattle in the fall were approximately 150 pounds lighter than those used in the spring.

From this study, three take-home points can be gleaned:

- 1) An acclimation period of at least seven days is necessary for cattle grazing wheat pasture. However, becoming acclimated does not equate to positive weight gain. Positive weight gain may require more time.
- 2) The acclimation period is likely shorter in the spring compared to fall and may be influenced by the size of cattle.
- 3) Cattle previously acclimated to grazing wheat may continue to outperform cattle that are naive to wheat, but this difference is likely to diminish over time.

The goal of selling heavier cattle and replacing them with lighter cattle is to increase profits. This is generally done by capturing a greater value of gain typical for lighter cattle and/or increasing pounds of gain per acre. The costs associated with this decision such as receiving costs, marketing costs, labor, etc. must also be accounted for. If using this strategy, a potential difference in performance when introducing naive cattle to wheat pasture should be considered. ■

Phillips, W. A., S. W. Coleman, and H. S. Mayeux. 2006. Case Study: Changes in Body Weight, Fill, and Shrink of Calves Grazing Wheat Pasture in the Winter and Spring. *Prof. Anim. Sci.* 22:267-272.