Best Management Practices

The Best Management Practices program addresses a number of factors that impact the health and well-being of finishing cattle, including selection, evaluation, environment, feeding/nutrition, management, animal handling and transportation practices. That's why it's so important to establish clear guidelines and standards for the care and treatment of all cattle – helping to ensure we are doing everything we can to maintain animal well-being. These practices have to be in place every day, for every animal, on every operation – from the feed bunks and pastures, to the feedyard pens, to the trucks used to transport, to the holding pens at the packing plant – and everything in between.

Cattle Evaluation During the Final Phase of the Finishing Period

Cattle that are experiencing any of the following conditions should not be fed Zilmax:

- **Mobility/Lameness**: Individual cattle showing signs of mobility issues or lameness, including founder/laminitis, foot rot, injuries or other ailments.
- **Poor-Structured Cattle**: Cattle with poor bone structure and conformation (fine boned) because these cattle may be poorly prepared to carry additional weight.
- **Health**: Cattle with known abnormal health conditions.
- **Over-Finished Cattle**: Over-finished cattle that are experiencing mobility issues.

Environmental Risk Factors

Cattle feeders must evaluate seasonal risks and environmental conditions that may have potential negative effects on cattle.

- **Extreme Heat Conditions:** Cattle should not be placed on Zilmax during or in the face of a National Weather Service, Excessive Heat Outlook, Excessive Heat Watch or Excessive Heat Warning. Special consideration should be given to heat-related risk factors including black-hided cattle, pens facing west or south, poor air movement, overly finished cattle and/or cattle with a history of respiratory disease.
- **Environment Conditions**: Weather conditions which cause wide variations or disruptions in feed intake should be considered before starting cattle on Zilmax.
- **Facilities**: Cattle fed Zilmax should be managed in pens with lowest risk or where weather mitigation strategies can be easily implemented.

Feeds and Feeding

Proper nutrition management affects nearly every aspect of the feedyard including health, gain, feed conversion, degree of finish and Zilmax effect on animal well-being.

- **Ration Formulation**: The finish ration fed to cattle on Zilmax should have similar (or lower) levels of concentrate as the previous finish ration without Zilmax.
- **Acidosis**: Pens of cattle with high risk or showing clinical signs of acidosis should not receive Zilmax. Every effort should be made to minimize intake variation by having a feed delivery program consistent with prior cattle experience.
- **Feed Delivery**: Feed delivery times and frequency should be kept consistent in all scenarios of feeding to minimize digestive issues. Feed delivery times may be slowly adjusted so that peak fermentation occurs at the coolest time of the day.

Animal Handling

Cattle handlers should follow Beef Quality Assurance guidelines for best practices of low-stress cattle handling when moving, processing and shipping cattle.

- **Moving Cattle**: Pen moves and sorting activities should be scheduled at least seven days prior to starting cattle on Zilmax.
- **Final Evaluation**: Cattle should always be re-evaluated for health and mobility issues before they are loaded for transportation. Lame, injured and morbid animals should not be shipped.
- **Shipping**: Cattle should be moved using a low-stress technique, in small groups at their own speed without over-crowding. Handlers should understand cattle flight zones and point of balance in an effort to keep animal calm. Facilities should have non-slip flooring. Shipping should be scheduled to minimize time in holding pens at the feedyard and packing facility. Shipping manifests should be maintained, and relevant information documented, including time loaded, weather conditions, unique circumstances and animal mobility.

Monitoring Mobility of Finishing Cattle and Investigation of Adverse Events

Objective:
The program objective is to monitor the mobility of cattle fed under commercial conditions in United States beef feedyard and packing industries.

Participating Feedyards:
Feedyards using Zilmax will be required to complete training and certification, according to the Zilmax Feedyard Certification plan. In addition, feedyards will be required to follow the Best Management Practices plan for selecting cattle to be fed Zilmax. While feeding Zilmax, feedyards will be required to comply with conditions of monitoring, including making cattle available for scoring, allowing site visits to record site-specific facility information, providing records of cattle history, feed deliveries and diet information, and reporting Adverse Events (AEs).

Procedures:

- Mobility of fed cattle at the end of the finishing period will be scored by third-party evaluators, similarly trained, according to a defined system. Mobility scores are as follows:
  1 – Normal, walks easily with no apparent lameness or change in gait
  2 – Keeps up with normal cattle when the group is walking; will exhibit one or more of the following: stiffness, shortness of stride, or slight limp
  3 – Lags behind normal cattle when the group is walking; will exhibit one or more of the following: obvious stiffness, difficulty taking steps, obvious limp, or exhibiting obvious discomfort
  4 – Extremely reluctant to move even when encouraged by a handler

- Evaluators will assign scores to cattle individually in a group as the group walks past the evaluator, so that the number of animals with scores 2, 3, and 4 in a group are recorded.

- Mobility will be scored prior to feeding Zilmax, after Zilmax feeding has ceased but prior to shipment from the feedyard (during the Zilmax withdrawal period), and at the packing plant as animals are first moved from lairage pens.

- Each participating feedyard and packing plant will be assigned a third-party site-monitor. The site monitors will be responsible for coordinating third-party evaluators, completing an initial series of forms that contain information regarding facilities (i.e. floor surfaces, loadout facilities, pen orientation, general management strategies) and determining how other relevant information can be retrieved from the

feedyard or plant's records (i.e. daily feed deliveries, pen history, time of shipment, time of arrival at the plant). At the feedyard, the site-monitor will categorize cattle according to sex and type. Feedyards will make daily observations of health.

- Feedstuffs and finishing rations used at participating feedyards will be recorded and updated as ration changes are made.

- Environmental conditions will be collected while cattle are on feed and on the day of shipment. In order to ensure consistency, environmental conditions will be centrally collected from publically available data from weather stations nearest each feedyard and packing plant, respectively.

- Adverse events will be reported and thoroughly investigated. Standard feedyard treatment records will be recorded, and field necropsies will be conducted on all available mortalities. Non-ambulatory animals at the packing plant will be investigated and necropsied as allowed by each plant.

Data Collection and Reporting: An experienced, independent veterinary epidemiologist will serve as the Data Manager. All data forms from mobility evaluators, site monitors, feedyards and packing plants will be sent electronically or in hard copy to the Data Manager for compilation, summarization and reporting.

Zilmax has a withdrawal period of 3 days prior to harvest. Not for use in animals intended for breeding. Do not allow horses or other equines access to feed containing zilpaterol. Do not use in veal calves. Not to be fed to cattle in excess of 90 mg/head/day in complete feed. If pen consumption of complete feed exceeds 26.5 lb/head/day (90 percent dry matter basis), zilpaterol should not be fed in complete feed. For complete information, refer to the product label.