

steers have $\frac{1}{10}$ of an inch of backfat, there is already a lot of seam fat, and that means weight fat is greatest in the rib and chuck areas," he says.

Fluharty adds forage in feedlots to prevent digestive disorders.

"Roughage particles should be relatively small when highly processed grain diets are fed, or undigested grain will pass through the rumen," he says. "It also helps maximize net energy for gain intake by cattle. Don't provide unlimited access to a round bale of hay. Feed has to be in the bunk and be controlled."

To maximize lean growth and feed efficiency, Fluharty recommends a prescription or programmed-intake corn-based diet.

"We want to control pattern of growth, improve efficiency and change composition of growth. Try to get the cattle to gain with propionate and limit the visceral organ weight," he explains. "If you feed cattle *ad libitum* all the way through, it costs you unnecessary feed. But you don't want to over-restrict your cattle on feed, either."

An automated feed-delivery system can reduce human error, he says, as well as limit feed waste and metabolic disorders that may decrease feed efficiency.

"You can control intake and improve feed efficiency and reduce overall feed costs. Work with a nutritionist to increase gain over time and remove visceral fat, increase propionate and marble well," he says. "Increasing levels of protein must be fed as intake is reduced or it reduces the animal's ability for lean tissue growth. You end up with fatter, lighter-weight cattle."

Consider grain coproducts

When it comes to coproducts, no one size fits all, says Fluharty. "U.S. corn use for ethanol production has increased significantly, which has created more coproduct availability for animal feed rations, but differences in coproducts exist. To be sure producers feed for the best response, they need to have coproduct batches analyzed."

Fluharty says aflatoxins may not all be destroyed during ethanol production, which can cause a reduced growth rate. In addition, variance in both nutrient and sulfuric acid levels can occur at the ethanol plant level. For example, sulfuric acid levels may range from 0.5% to 1.8% sulfur, while the maximum tolerable level for cattle feed use is 0.4% of diet dry matter.

"Modified, wet, dried and distillers'

Manage to maximize grading and pricing

The right genetics combined with sound management can improve profitability when it comes time to market feedlot cattle, says Francis Fluharty, ruminant nutrition professor at Ohio State University.

"Quality grades predict palatability, and palatability is determined by fat. It is the overall combination of traits that lead to eating satisfaction — taste and flavor, tenderness, juiciness and mouth feel," says Fluharty. "Prime grade is not based on days on feed. Quality grade is determined by marbling, and genetics affect the ability to marble. Research suggests the right marbling comes when animals are 167 to 236 days old and weigh 835 to 945 pounds."

Fluharty says many animals that don't grade USDA Choice at an advanced age probably would have graded Choice at a younger age with management and diet strategies that used a high-concentrate diet earlier in life. High levels of dietary vitamin A can reduce marbling by 30%.

In addition, beef gets darker as animals get older, which affects grade.

"Poor disposition and use of implants have a negative impact on quality grade, too," he says. "Prior health history can influence carcass quality. Sick cattle mean lower quality grades."

Yield grades predict the cutability, or the amount of boneless, closely trimmed retail cuts that can be obtained from the carcass. Yield grade is determined by criteria that include subcutaneous fat thickness at the 12th rib; ribeye area; hot carcass weight; and kidney, pelvic and heart fat.

"Both quality and yield grade go into grid pricing, and more than 70% of carcasses are marketed on that basis. Grid pricing varies from plant to plant and day to day," he says. "Plants look at a number of factors like the Choice-Select spread and drop credit. Choice [Yield Grade] 3 is used as the base in grid pricing to determine premiums and discounts with various yield and quality grades."

Fluharty says the value difference between a USDA Prime YG 1 and a USDA Select YG 5 can be as much as \$400, depending on the price and weight of the carcasses. He says YG 2s or lower YG 3s are the goal, and the main objective is to avoid YG 4 and 5 carcasses.

"Don't chase premiums, but avoid discounts," he says. "If 50%-60% of your cattle grade Choice and are efficient, you are OK in some regions of the U.S. Other regions require 80% or more Choice cattle. Control the diet, days on feed and amount of fat on them. You also need to know the market, and use risk-management tools."

A heavier carcass does not always mean more profit, especially if the cattle don't have the genetics to perform, he adds. For example, if a steer appears to gain \$60 in carcass value with more days on feed, count in yardage and feed costs. With \$136 more additional cost of gain, you end up with a \$76 loss of revenue. That is the loss from a YG 3 to a YG 4 and 1,210 lb. to 1,300 lb.

In the future, Fluharty predicts discounts will be greater for cattle that are too small [ribeyes less than 10 square inches (sq. in.)] or too large (ribeyes larger than 13 or 14 sq. in.) for the case and excessively fat. Use of growth promoters and feed additives may also negatively impact pricing.

"Know what affects the eating quality of your beef product before you use it," Fluharty says.

solubles all have varied dry matter. Small producers who buy the coproduct one time and use it in a feeding program without doing sulfur analyses could be in trouble. They may incorrectly estimate the percentage," he says. "Large feedlots with several loads a day can probably run 0.6%-0.7% with no problem if intake fluctuates."

Coproduct fat levels also vary. Fluharty says the more distillers' fed, the greater the chance of urinary calculi if phosphorus is being supplemented. Full-fat distillers' grain research shows fat should not be more than 6%, as fat will coat feed particles in the rumen. Coated particles do not allow bacteria to attach in the rumen and ultimately lower feed digestibility.

"On a growing forage diet, keep the dietary fat level below 4%. Otherwise fiber-

digesting bacteria attach to the forage and the fat limits the attachment," he explains. "With grain feedlot diets and fat at 6%, you can increase the diet energy density. That may be beneficial to animal performance, especially in hot weather."

Adding too much fat or too much sulfur can result in abnormal animal behavior. Resulting hydrogen sulfide gas can be eructated by the animal and then inhaled. The gas directly enters circulation through the pulmonary system and may disrupt energy metabolism in the brain.

To prevent such problems, Fluharty says producers can add monensin (Rumensin®) to rations.

"Animals fed 60% dried distillers' grains in the ration along with monensin and

CONTINUED ON PAGE 164