HARRIS RANCH -- A COMMITMENT TO SUSTAINABLE AGRICULTURE

2020

Introduction

At Harris Ranch, we believe that raising cattle and environmental stewardship go hand-in-hand. For us, as well as our ranching partners, the land is not just where we raise our cattle; it's also where we raise our families. We have a personal stake in the quality of the environment and are always looking for ways to improve it. For those that raise cattle, sustainability means ensuring that the land will provide for the next generation by focusing not only on the well-being of our livestock, but also on maintaining the land and its natural resources.

Sustainability, as it relates to farming and ranching, means growing crops and livestock in ways that meet three objectives:

- Environmental stewardship and resource conservation
- Improved well-being for the farm family and the community
- Economic profit

In 1989 the American Society of Agronomy defined sustainable agriculture as follows:

"A sustainable agriculture is one that, over the long term, enhances environmental quality and the resource base on which agriculture depends; provides for basic human food and fiber needs; is economically viable; and enhances the quality of life for farmers and society as a whole."

Harris Ranch believes that promoting sustainability in all of our agricultural operations is critical to our future and that of the agriculture industry. However, our dedication to the principle of sustainability can only be achieved through our additional commitment to the principles of quality, humane livestock handling and good corporate citizenship.

A COMMITMENT TO QUALITY

Over the past five decades, Harris Ranch has grown to be recognized as one of the most progressive, innovative and quality-conscious beef producers in the western United States. Today, Harris Ranch is also one of the most recognized brands of beef in the country. Family owned and functionally integrated, we control cattle sourcing, feeding and processing.

AN INTEGRATED BEEF PRODUCTION SYSTEM

Cattle Sources

One of our true strengths at Harris Ranch is our strong network of ranching partners. These progressive ranching families are committed to the same core values as Harris Ranch: honesty, integrity, and a dedication to preserving the ranching industry now and into the future to ensure a safe and wholesome food supply. Among these many western producers are a unique group of ranchers who are members of our Partnership for Quality (PQ) Program. Through our close involvement with these PQ members and our large network of livestock producers, Harris Ranch is able to expand our control over the level of quality of our beef from the ranch all the way to the consumer. Far from being "factory farms", our network of ranching families are committed to sustainable production practices and humane livestock handling.

Did you know?

- Approximately 85 percent of U.S. land is unsuitable for producing crops. However, livestock such as cattle have the ability to graze on these lands and convert these unsuitable forages into a nutrient-dense food that humans can consume. Grazing animals on this land more than doubles the area that can be used to produce food for our nation's growing population, showing the valuable role of cattle in the ecosystem.

- Technological advances and improved genetics allow for more beef to be produced from fewer cattle, while using fewer resources such as land, feed, and water. This is important to the beef industry's sustainability story. According to Frank Mitloehner (University of California-Davis), "Production efficiencies and greenhouse gas (GHG) emissions are inversely related- when one rises the other falls". His research shows that in 1970 it took 140 million head of cattle to produce the same 24 million tons of beef that were produced by only 90 million head in 2015. That's a 36% reduction that can be attributed to production advances in the beef industry that improve livestock production efficiency.

- Harris Ranch works with hundreds of ranching families throughout the west. Nationwide it is estimated that nearly 90 percent of cattle farms and ranches are family owned and operated, with approximately two-thirds of these farms and ranches having been under the same family ownership for two generations or more.

- By working with Harris Ranch to market the cattle they raise, these families are able to remain economically viable in their ranching business. Without this relationship, many of these families would have to market their cattle to feeders and processors in the Midwest at a reduced price due to the shipping disadvantage. By marketing their livestock with Harris Ranch in the western region of the country, these producers are also able to help reduce the carbon footprint of the livestock industry associated with transportation.

- By following Best Management Practices and avoiding overgrazing, these ranching families actively contribute to rangeland enhancement, watershed protection and help build healthy wildlife ecosystems. For example, many farmers and ranchers practice natural resource management activities including soil tests, brush and weed control programs, grazing management plans, minimum or conservation tillage and range quality management.

- The livestock production industry is one of the only industries in the U.S. that can sequester carbon emissions from other industries and sources.

Cattle Feeding

One of the keys to producing great beef is meticulous attention to detail – especially regarding feeding practices. Here at Harris Ranch, we believe that corn-fed beef is the most flavorful, tender and juicy beef available. Our feeding division purchases Midwestern corn by the trainload to serve as the basis for our scientifically formulated rations. Our livestock nutritionist is dedicated to helping cattle achieve optimum performance and produce beef of unsurpassed quality.

Although our cattle spend 70 - 80% of their lifetime grazing on grass on western ranches, we finish them in our feeding division for a brief period -- typically about 120 days -- on a nutritionally balanced, grain-based diet.

Before coming to Harris Feeding Company, our ranching partners make every effort to prevent disease to minimize the need for antibiotic use. Vaccination protocols to prevent common diseases, supplementation with minerals to support a strong immune system and low stress cattle handling form the basis for achieving this goal.

When young children enter school, they receive vaccinations against human diseases to stem the spread of illness. Cattle face a similar challenge when they move from their original location on a ranch to Harris Feeding Company.

Several years ago, Harris Ranch discontinued feeding Tylan – a product that belongs in the same class of antibiotics used in human medicine. Today at Harris Feeding Company, antibiotics are used in a therapeutic manner under veterinarian oversight to treat cattle that require medical attention. We believe it is inhumane to not treat an animal that becomes ill. Just like caregivers with children who become sick and need medicine, we administer antibiotics to sick cattle to help them achieve and maintain the highest levels of health. If antibiotics are administered, withdrawal periods – or the time it takes for a drug to naturally be eliminated from the animal's system -- are strictly followed to make sure no measurable amount of antibiotics are present in the animal at the time of harvest.

In the U.S., an animal treated with antibiotics cannot enter the food system unless the antibiotics have completely worked through its system. In fact, it is illegal for meat products containing antibiotic residues to make their way to market.

Critics of grain-fed beef production systems typically point to a number of practices which they believe are economically unsound and non-sustainable. Some of these include:

- Deforestation practices for increased feed production and a resulting loss of CO2 sequestration
- Nitrogen fertilizer used in the U.S. to produce feed grain and the amount of CO2 emissions associated with fertilizer use
- Fossil fuels used to produce fertilizer and animal feeds, as well as to transport and produce these products
- Methane emissions from livestock production – especially Concentrated Animal Feeding Operations (CAFO)

- Increased overall levels of greenhouse gas emissions

These same critics often cite a 2006 report from the United Nations Food and Agriculture Organization (FAO) titled "Livestock's Long Shadow". However, many of the statistics cited in this U.N. report differ significantly from those calculated by other organizations including the U.S. Environmental Protection Agency (EPA), USDA and the U.S. Forest Service. Furthermore, one of the authors of the United Nations FAO's "Livestock's Long Shadow" report, Pierre Gerber, later admitted that "there was a flaw in the United Nations' report".

Here is a fact check on these criticisms:

- Deforestation for livestock feed production and grazing does not occur in the United States, which actually has 16 million more acres of forestland than a century ago according to both the USDA and the U.S. Forest Service. In fact, the most significant land use change that affects carbon levels in the U.S. is the conversion of agricultural lands to development, which in turn reduces land available for carbon sequestration.

- The FAO report vastly overestimates both the amount of nitrogen fertilizer used in the United States to produce feed grain for livestock and the amount of CO2 emissions associated with fertilizer use. Using USDA feed grain acreage data and typical nitrogen fertilizer application rates, it is estimated that about 690,000 metric tons of nitrogen fertilizer is used to produce all U.S. feed grains. Based on FAO's own conversion factor, this fertilizer use should result in about 1.725 million tons of CO2 being produced -- nearly 7 times LESS than the FAO estimate of 11.7 million tons of CO2.

- The FAO report's estimate for livestock's contribution to GHG emissions (18%) is a *global* estimate and not applicable to the United States. The U.S. livestock industry is, in fact, one of the most efficient and lowest environmental-impact systems in the world. According to the EPA and leading scientists throughout the U.S., the *entire* U.S. livestock production industry accounts for 4.2 percent of all annual U.S. GHG emissions, as opposed to transportation (27%), energy production (31%), and all other sources (38%). Of this 4.2 percent, beef cattle account for 2.2%.

- According to Dr. Judith Capper, a leading livestock sustainability expert, the beef industry has made great strides in regards to sustainability over the past several decades. Her research indicates that a pound of beef raised in 2007 uses 33% less land, 12% less water, 19% less feed, and 9% less fossil fuel energy than the equivalent pound of beef in 1977. Capper attributes these great improvements in sustainability to raising cattle on pasture prior to finishing them on a balanced diet in a feed yard, as we do with our beef here at Harris Ranch. Her research associated with this attribution shows that each pound of grain-finished beef requires 45% less land, 76% less water, and 49% less feed, while simultaneously generating 51% less manure and 42% fewer carbon emissions than 100% grass-finished beef.

- Corn is transported from the Midwest by rail to our cattle feeding operation. By relying on rail transportation of 110 cars carrying 12,000 tons of corn each week, Harris Ranch is able to

reduce transportation costs and carbon emissions when compared to relying on semi trucks and trailers to transport feed on western highways.

- Reduced feed costs help to maintain profitability at Harris Feeding Company, ensuring we will continue to be a viable market for cattle produced on western U.S. grazing lands for many years to come. Reliance on Midwestern feed grains also helps to keep California cropland producing higher-value crops such as fruits, nuts and vegetables and enables California to remain the nations #1 supplier of fresh fruits and vegetables.

- Our feeding operation is part of a large and integrated agricultural production system that benefits thousands of individual farmers, ranchers and processors. This, in turn, helps support hundreds of rural communities not only in the western U.S., but also in the Midwest.

- Our feeding operation covers nearly 800 acres and is operated as a zero discharge facility. This means that any rain water that falls on the operation or any waste water generated by Harris Feeding Company does not leave the facility.

- Our manure management system enables us to produce OMRI Certified Organic Compost for use on nearby cropland thus helping to reduce reliance on chemical fertilizers. Our cattle feeding operation generates approximately 100,000 tons of organic compost each year. This compost is applied to over 20,000 acres of farm ground annually.

- Our feeding operation uses an insect management program that includes utilization of parasitic wasps to help reduce usage of chemical insecticides.

Cattle Processing

By owning our own cattle processing facility, we complete the loop in our functionally integrated production system. Harris Ranch Beef Company, the processing arm of the company, has USDA inspectors on site each day and employs a large staff of Quality Assurance personnel.

- Harris Ranch is committed to maintaining the quality of the environment, including the groundwater used at our processing facility. Just like many rural residences and agribusinesses, Harris Ranch Beef Company relies on the underground aquifer to supply us with a clean and reliable supply of water which, in turn, allows us the opportunity to supply beef products to our consumers that are of unsurpassed safety and quality. Over the past few years we have invested heavily in conservation efforts and facility upgrades that in combination have enabled us to reduce our water usage by nearly fifty percent.

- Although we have little control over the quality of the underground water that travels miles before reaching our facility, we are committed to ensuring that our beef processing operation has no negative effect on groundwater quality as wastewater leaves our facility. To help ensure that the water that is ultimately discharged from our processing facility meets all required standards we are taking the following steps:

    1. Constructing additional groundwater monitoring wells

2. Pre-treatment of wastewater using dissolved air flotation (DAF) to remove suspended solids

3. Primary, secondary and tertiary water treatment systems

4. Construction of a new, covered anaerobic wastewater lagoon that will produce biogas which will be collected and used as an alternative fuel and reduce greenhouse gas emissions

5. Development of a new, science-based agronomic nutrient management plan to help ensure the nutrients contained in the wastewater applied to our farm fields can be more fully utilized by the crops we plant

- These new technologies, along with improvements to our farming operation, will help us to upgrade our water infrastructure, reduce costs and maintain the environment for generations to come. Research conducted by third party experts confirm that the nitrogen management plan we endorsed will enable Harris Ranch over time to meet all required wastewater standards. We are confident that our newly installed upgradient and downgradient monitoring wells will confirm that our water quality is continually improving as we implement the waste water treatment facility improvements.

- Harris Ranch is one of the largest employers in Fresno County, with nearly 2,000 employees company-wide, and is dedicated to our employee benefit programs. We make health and life insurance available to all full-time employees and also offer an employer-supported 401 K retirement program. We provide our employees with ongoing training to help them move to increasingly higher levels of responsibility within the company. For many years Harris Ranch has also offered a scholarship program for graduating high school seniors. This program is open to all children of Harris Ranch employees and has enabled hundreds of students to attend college who might otherwise not have had the opportunity to do so. We also have multiple intern programs available for college students to help train the next generation of Harris Ranch managers. When combined, our employee benefit programs have resulted in a relatively low level of employee turnover when compared to other agricultural enterprises.

- If we did not own our own processing facility, most of the fed cattle we raise would need to be transported to the Midwest for processing. Finished boxed beef would then have to be transported back to the west for distribution to supermarkets and foodservice distributors. This would not only ad cost but would also increase the industry's carbon footprint.

- Harris Ranch Beef Company has ongoing programs to recycle cardboard and other packaging materials and has reduced the use of plastic packing during the past five years. These efforts have both economic and environmental advantages.

- Harris Ranch recently upgraded 28 trucks in our fleet to liquefied natural gas (LNG) making them near-zero emission vehicles. Also, we have incorporated electric vehicles at our processing plant to help shuttle trailers around our facility and further reduce our carbon footprint.

- Both Harris Feeding Company and Harris Ranch Beef Company help reduce "food miles" – the distance that food travels from its place of origin to its place of final consumption. Beef

produced in the Midwest and shipped to the west coast for consumption travels considerably more food miles than beef produced by Harris Ranch located in Central California.

SUMMARY

Harris Ranch is proud of our long-standing history of being a producer of premium quality beef products. We are dedicated to continuing this tradition as we move into the future. We eagerly embrace new technologies and production practices that will allow us to remain an industry leader in terms of quality, safety and new product innovation. The Harris family, our ranching partners and our entire team of associates take pride in being part of a genuine western tradition and for placing quality, consistency and great taste in every package of our beef.