



HARRIS RANCH – A COMMITMENT TO SUSTAINABLE AGRICULTURE

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 on the well being of not only our livestock but also by maintaining the natural resources of the land.

Farming and ranching sustainably means growing crops and livestock in ways that meet three objectives:

- Economic profit
- Social benefits to the farm family and the community
- Environmental conservation

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. But 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. Still family owned and functionally integrated, we control cattle sourcing, feeding and processing.

AN INTEGRATED BEEF PRODUCTION SYSTEM

Cattle Sources

One of our true strengths of Harris Ranch is our network of ranching partners. These progressive ranching families are committed to the same core values as Harris Ranch. 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, as well as other livestock producers, Harris Ranch is able to expand our control over the quality of our beef from the ranch all the way to the end consumer. Far from being “factory farms”, our network of ranching families are committed to sustainable production practices as well as humane livestock handling.

- Approximately 85 percent of U.S. grazing lands are unsuitable for producing crops. Grazing animals on this land more than doubles the area that can be used to produce food. Cattle serve a valuable role in the ecosystem by converting forages humans cannot consume into a nutrient-dense food.
- Technological advances and improved genetics allow for more beef to be produced from fewer cattle and using less resources (land, feed and water) which is important to our sustainability story. In 1970, 140 million head of cattle produced 24 million tons of beef. By 2015, 90 million (36 percent fewer) head of cattle produced the same 24 million tons of beef.
- 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. Approximately two thirds have 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 stay economically viable. 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 freight disadvantage. By marketing their livestock in the western region of the country, the producers are also able to help reduce the carbon footprint of the livestock industry.
- By following Best Management Practices and avoiding overgrazing, these ranching families are able to actually 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 raising 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 secrets to producing great beef is meticulous attention to detail – including feeding practices. Since 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 the time grazing on grass on western ranches, we finish them for a brief period -- typically about 120 days -- on a nutritionally balanced, grain-based diet.

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 and to also 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.

Here is a fact check on these criticisms:

- Deforestation for 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 reduces land available for carbon sequestration.
- The FAO report vastly overestimates 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 claims fossil fuel used to produce fertilizer and animal feed and to transport and produce products accounts for the bulk of the energy used in livestock production systems – but provides no comparable figures for vegetables, grains and fruits produced for human consumption. In fact, a 1997 University of Exeter (U.K.) study found typical salad vegetables, and fresh fruit require substantially more fossil fuel energy to produce.
- Methane emissions in the United States are on the decline. According to the United Nations Food and Agriculture’s statistical database, total direct greenhouse gas emissions from U.S. livestock have declined 11.3% since 1961 while production of livestock meat has more than doubled. The technological, genetic and management changes that have taken place in U.S. agriculture since World War II are primarily responsible.
- 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 *entire* U.S. agriculture sector accounts for on 6 percent of annual U.S. GHG emissions, according to the EPA. Of this, livestock production is estimated to account for only 2.8 percent of total emissions.
- According to a University of New South Wales study published in the journal *Environmental Science and Technology*, beef produced in feedlots has a smaller carbon footprint than meat raised exclusively on pastures. The study found that feedlot beef production generated less greenhouse gas per kilogram of meat than grass-fed beef. Feedlot production had a carbon footprint of 9.9kg of carbon dioxide equivalent (CO₂e) per kilo of “hot standard carcass weight” (HSCW). Grass-finished beef produced 12kg CO₂e per kg/HSCW. According to the study, the

feedlot was found to produce meat more efficiently, effectively offsetting the greenhouse impact of the additional transport and feed production needed. The other main reason cited for the better greenhouse performance of grain-fed beef is the superior digestibility of the feed and the associated reduction in methane emissions. Digestion-related methane emissions are the main source of greenhouse gas from the livestock industry.

- 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 helps 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 in the Midwest as well.
- Our feeding operation covers nearly 800 acres and is operated as a zero discharge facility meaning that any rain water that falls on the operation or any waste water generated by Harris Feeding Company cannot leave the facility.
- Our manure management system enables us to produce OMRI Certified Organic Compost for use on nearby organic cropland. We use this fertilizer not only on our own organic crops including garlic and onions, but also sell this fertilizer to other western growers thus reducing the reliance on chemical fertilizers. Our cattle feeding operation generates approximately 50,000 tons of organic compost each year. This compost is applied to over 20,000 acres of farm ground annually.
- Our insect management program 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 also 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. 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 our beef processing operation has no additional effect on groundwater quality as wastewater leaves our facility. To help ensure the

water that ultimately is 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 feel 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. Harris Ranch has also for many years 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 who might not otherwise have the opportunity to attend college 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 add cost but also would increase the industry's carbon footprint.
 - Harris Ranch Beef Company has ongoing programs to recycle cardboard and other packaging materials and have reduced our use of plastic packing during the past five years. These efforts have both economic as well as environmental advantages.
 - 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.