

The agricultural meat and dairy industry are under heavy scrutiny in today's market as consumers question the quality, safety, and sustainability of their food choices. Color assessment plays a vital role in monitoring these three interrelated characteristics. From inception to consumption, these food products undergo a series of evaluative testing procedures. Safe handling, packaging, preservation, waste, and even livestock management practices can all benefit from color assessment and technology.

## Market demand and environmental impact

The beef industry is currently investigating new ways to manage livestock production and increase efficiency in these practices. A major concern among the American population involves the kind of impact this industry is having on the environment. Many environmental concerns have been linked to livestock farming, yet the [demand for these products continues to increase with new dietary trends and a more globalized trade system](#).

Meat animal producers make up only a small portion of the demographic population, so in order to meet consumer demands they must find affordable ways to address some of these major concerns. Many farmers begin with finding better ways to manage land use and feed production. Spectrophotometers assist many farmers in [assessing animal feed](#) and can also [monitor soil quality](#) using the same color assessment technology.

In addition to improving the quality of livestock management, color assessment is also used to for raw meat inspection and to [monitor the quality and shelf-life](#) of the product. Reducing the amount of wasted product due to improper handling, inspection, or spoilage also reduces the amount of livestock production needed to meet consumer demand. Less waste equals a decreased carbon footprint and increased profits for agricultural livestock farmers. It's a win-win situation for everyone. Color assessment plays a vital role in this process by eliminating human errors in inspection practices and by utilizing this technology to find new methods for processing and food preservation.

## Spectrophotometry and packaging materials

Meat packaging is an essential step in livestock production and makes a considerable difference in food safety, preservation, and appearance. The current materials used for meat packaging have been shown to have an adverse impact on our environment, forcing scientist to develop new materials to meet this need. The [United States Department of Agriculture \(USDA\) website](#) recently featured an article titled "[Applications of Emerging Technologies to Improve the Quality, Safety and Sustainability of Fresh Meat](#)," which stated that, "Presently, meat packaging systems consist of non-recyclable, petroleum-based polymer films, plastics, or also Styrofoam. Although some packaging materials developed from renewable resources have been developed, they go widely unused due to added cost and potentially adverse interactions with meat on meat quality. Packaging materials and treatments during packaging can also improve the safety of fresh meat. The identification of safety intervention technologies that improve (or have no effect on) meat quality are essential to the adoption and growth of alternative meat packaging materials. Enhancing food safety while addressing and improving the sustainability of meat production and retailing practices can directly impact public welfare." Color assessment was mentioned among these new technologies as a way to offer continual monitoring of food products, as well as an aid in new plastic packaging development.

Full article with photos available here:

<https://www.hunterlab.com/blog/color-food-industry/using-color-assessment-to-ensure-quality-safety-and-sustainability-in-the-meat-industry/>

