

# Hormone Implants

## ARE SAFE

A three-ounce serving of beef from a steer implanted with estrogen contains

**1.9**  
nanograms of estrogen<sup>1</sup>



A three-ounce serving of beef from a steer **NOT** implanted with estrogen contains **1.3** nanograms of estrogen<sup>1</sup>

A three-ounce serving of potatoes contains

**225**  
nanograms of estrogen<sup>1</sup>



A three-ounce serving of cabbage contains

**2,000**  
nanograms of estrogen<sup>1</sup>



Every day, an average woman produces

**513,000**  
nanograms of estrogen<sup>2</sup>



Every day, an average man produces **136,000** nanograms of estrogen<sup>2</sup>



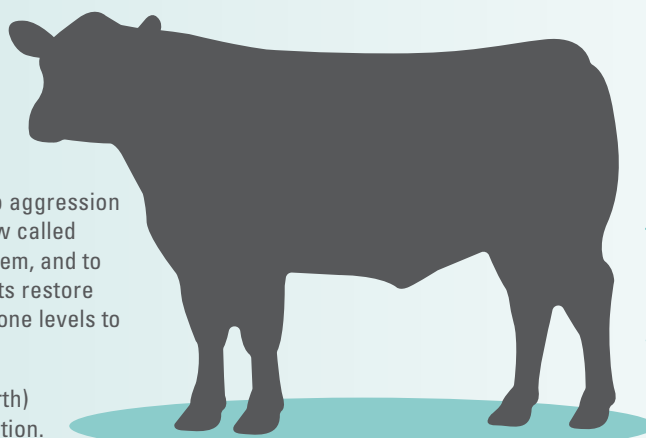
## ARE PRACTICAL



Bulls' hormone systems are removed to curb aggression for the safety and welfare of the animals (now called "steers") and the people who interact with them, and to make beef more tender and flavorful. Implants restore enough of a steer's naturally-produced hormone levels to **grow efficiently**.<sup>3</sup>



Heifers (female cattle that have not given birth) have hormone systems focused on reproduction. Hormone implants **balance a heifer's natural hormone levels** to allow it to grow more muscle instead of fat.<sup>4</sup>

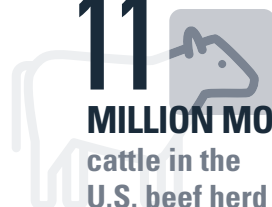


Hormone implants help balance natural hormone levels in cattle to allow them to convert their feed into lean muscle instead of excess fat, which helps keep beef affordable.<sup>4</sup>


## ARE SUSTAINABLE

To raise the same amount of beef **WITHOUT** hormone implants, it would take:<sup>5,6,7</sup>


**11**  
MILLION MORE  
cattle in the  
U.S. beef herd



**18**  
MILLION MORE  
acres of land for grazing  
and growing feed



**515**  
BILLION MORE  
gallons of water for  
producing feed and  
maintaining animals



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3. Wessler, B. Why is early castration of bull calves important? *Drovers CattleNetwork*. 2011. <http://www.cattlenetwork.com/cattle-resources/preconditioning/Why-is-early-castration-of-bull-calves-important-125483643.html>. Accessed July 21, 2017.

4. Loy, D. Iowa Beef Center. Iowa State University Extension. Understanding Hormone Use In Beef Cattle Q&A. IBC 48. <http://www.iowabeefcenter.org/information/IBC48.pdf>. March 2011. Accessed August 2, 2017.

5. Merck Animal Health. Meat Sustainability Calculator. <http://www.meatsustainabilitycalculator.com/>. Accessed August 10, 2017.

6. National Cattlemen's Beef Association. Beef Industry Statistics. 2017. <http://www.beefusa.org/beefindustrystatistics.aspx>. Accessed August 10, 2017.

7. Capper, J. L. 2013. The environmental and economic impact of steroid implant and beta-adrenergic agonist use within U.S. beef production. In: Proceedings of the ADSA-ASAS Joint Annual Meeting, Indianapolis, IN, USA.