Implants Used in Beef Cattle are Safe and Efficacious

Beef from cattle that have had implants administered is safe for human consumption and contains far less estrogenic activity than many other foods.

The increased average daily gain (ADG) brought on by implanting beef cattle increases the saleable yield by increasing both live weight of the cattle and hot weight of the carcass. Increasing either of these endpoints increases the net return for the beef producer. Economics change depending on the given year; however, most implant strategies return $50 to $100 per animal on average.

While economics has been the driving factor behind implant adoption, the ease of implanting cattle also led to the quick and widespread acceptance of the technique. The implant should be placed in the middle third of the ear from top to bottom and middle third from skull to the tip of the ear (Figure 1). Implants are inserted subcutaneously, just under the skin of the ear, using a sharp needle and sanitary technique. Implant retention should be checked after approximately two weeks. Abscessed or lost implants should be replaced at that time. If clean and proper implant techniques are used, replacements should be minimal.

Implants for use in beef cattle production have been under scrutiny recently, in part, due to the increasing consumer demand for "all natural" products. However, it is important to remember that in order for implants to have been approved by the Food and Drug Administration (FDA) for use in beef cattle, they had to meet all of the criteria necessary to be deemed “safe” by the FDA. To meet the FDA criteria, there cannot be any residue of the implant in edible tissue or chronic physiological or acute toxic affects of the implant on the animal, and the implant cannot cause any mutations or cancerous growths. In short, implants had to go through rigorous testing to ensure that they were safe for use in cattle and would not bring harm to humans. In addition, the FDA specifies that implants must be efficacious—that is, they must do what the label claims they do (i.e., improve ADG and FE).

Despite the consumer scrutiny surrounding implant use, implanting cattle has miniscule effects on hormone concentrations in meat for human consumption. While implants do alter the hormonal responses in animals, just like birth control alters human hormones, implanting cattle has minute effects on hormone concentrations in the meat for human consumption. Meanwhile, a serving of broccoli has nearly 90,000 times the estrogenic activity as steak, a vegetarian (black bean) burger has over 1,000,000 times the estrogenic activity when compared to a serving of steak, and tofu has 250,000,000 times the concentration of estrogenic activity. Attempting to graphically represent these differences, one can barely see the contribution of steak (Figure 2). Bottom line, hormone consumption from beef, be it implanted or not,
is minuscule when compared to other foods. Thus, implanted beef is not only safe for human consumption but also economically advantageous for beef producers.

Figure 2. Estrogenic activity in various foods.

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**Source**


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