# UF-Gainesville Beef Cattle News Corner

## Is beef from *Bos Indicus* influenced cattle healthier for you? – Research at UF says it might be…

**Heather Hamblen and Raluca Mateescu**, Department of Animal Sciences, University of Florida

**Fatty Acid Background**

Low fat diets have been recommended on the premise they would decrease the risk of developing several cardio-vascular diseases (CVD) and, therefore, improve human health. As meat contains a relatively high amount of fat, some people followed the prevailing recommendation and cut down on their meat consumption. Contrary to general belief, not all fats are equal. There are three types of naturally occurring fatty acids: saturated fatty acids (SFA), monounsaturated fatty acids (MUFA), and polyunsaturated fatty acids (PUFA), which all differ in their chemical makeup and how they impact the body. Therefore, individual fatty acids should be taken into consideration when making dietary choices.

There are some correlations between saturated fatty acid consumption and incidence of cardiovascular disease, due to an increase in LDL (bad cholesterol). On the other hand, monounsaturated fatty acids slightly decrease LDL (bad cholesterol) and increase HDL (good cholesterol), which is considered beneficial. Polyunsaturated fatty acids decrease LDL and increase HDL levels to an even greater extent than monounsaturated fatty acids. Most of you have probably become familiar with the polyunsaturated fatty acids omega 3 and omega 6. Omega 3 and Omega 6 are essential fatty acids for humans, meaning that the body cannot synthesize them, so we need to ensure we include them in our diets. The three main sources of omega 3 in our diets are eggs, fish, and meat from ruminants (which includes beef).

Taking all of this into consideration, the beef industry could improve the nutritional value of their product and appeal to health conscious consumers by increasing monounsaturated fatty acid and polyunsaturated fatty acid content and decreasing saturated fat content.

Over the last few years, researchers have identified several genes that regulate the fatty acid composition of beef. This, along with the natural variation existing in many breeds of cattle, suggests that fatty acid profiles in beef could be improved through genetic selection. The University of Florida Department of Animal Sciences is currently conducting research on *Bos Indicus* influenced cattle to determine the extent to which genetics influence fatty acid composition and to develop genomic tools for identification of genetically superior animals.

**Fatty Acid Findings**

Preliminary data on fatty acid composition of beef analyzed on 150 Angus-Brahman crossbred cattle has yielded some useful results.

In this initial set of animals, there was no significant difference in the amount of monounsaturated fatty acids among the different breed groups (MUFA ranged for 44.2% to 45.8%). A beneficial trend was found in both the saturated and polyunsaturated fatty acids with

SFA declining from 51.3% to 47.5% and the PUFA increasing from 4.3% to 6.9% as the percentage of Brahman increased from 0 to 100% (Figure 1).

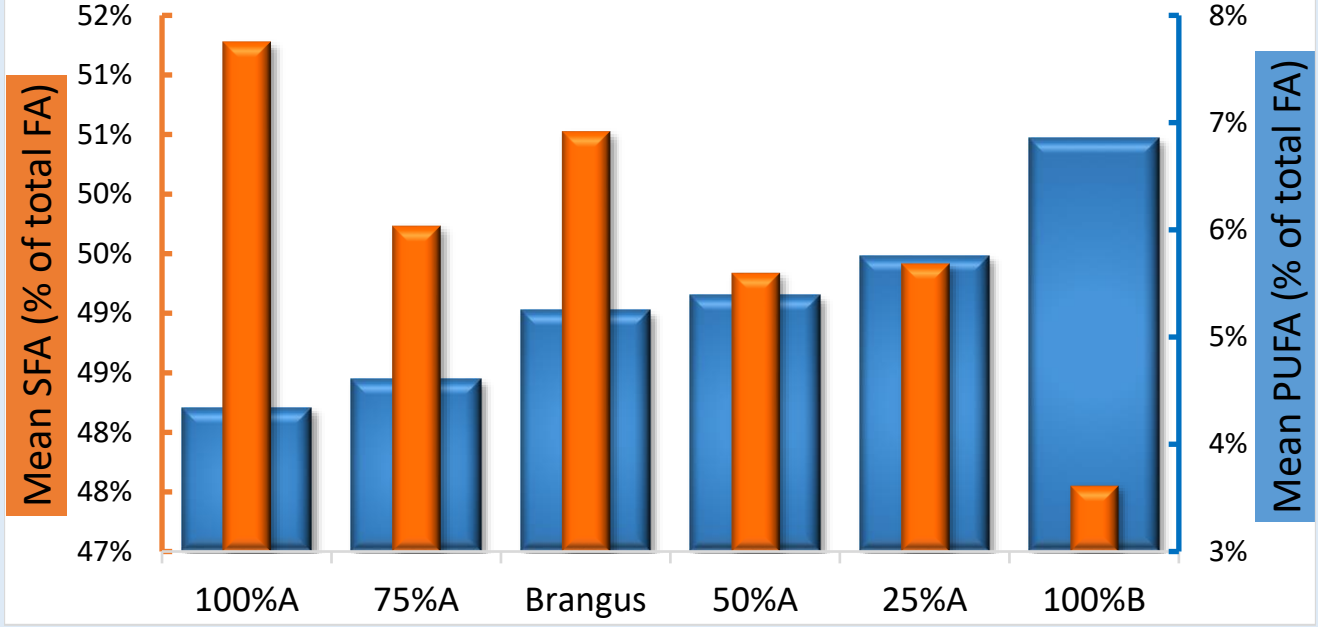


**Figure 1.** Percentage of saturated fatty acids (orange) decreasing from 51.3% to 47.5% and percentage of polyunsaturated fatty acids increasing from 4.3% to 6.9% as the percentage of Brahman increased from 0 to 100% in a sample of 150 crossbred cattle from the UF herd.

These findings could be great news for producers raising Brahman influenced cattle as our preliminary data shows they may have an advantage of a healthier fatty acid composition. This may open the door for producers to appeal to health conscious consumers through marketing beef that has a more desirable fatty acid composition. Additionally, researchers will continue working towards finding genetic markers that will allow producers to identify and select for animals that will produce beef with higher percentages of polyunsaturated fatty acids and lower percentages of saturated fatty acids.

The beef industry is in a good position to respond to the demands of health-conscious consumers. To capitalize on this trend, the industry needs to focus its research and promotion efforts toward nutritional and health benefits of meat consumption. Improving the fatty acid profile of beef would create a product marketable to consumers who place value on health attributes rather than high marbling.

*Heather Hamblen is a graduate student in the Department of Animal Sciences at University of Florida working on her M.S. degree with Dr. Mateescu.*