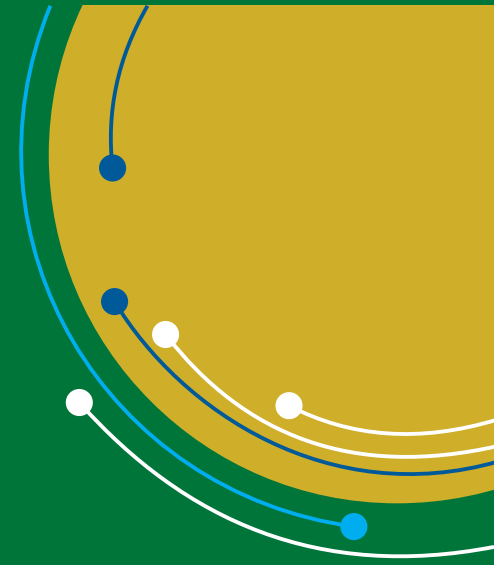


Development of Conditioned (Omega-3 rich) Meat through Modifications in Feed Ingredients



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Consumer awareness about health benefits of n-3 fatty acids is growing and is driving consumer demand for enriched food products. Enrichment of meat with omega-3 fatty acids is an opportunity for the broiler production sector to add value to their product, but enrichment can increase the cost of production. The world-wide production and consumption of chicken meat has become very popular due to the nutritional characteristic of this meat type.

Consumers are becoming more aware of the effect of the food they eat on their health. Cardiovascular disease (CVD) is one of the leading causes of death in men and women of all ethnic groups. Consuming saturated dietary fats and n-6 polyunsaturated fatty acids (PUFA) increases the risk of CVD, whereas consumption of n-3 PUFA may reduce CVD incidence. Dietary sources do not meet the requirements of these nutrients in the human diet; hence, feeding strategies have been adopted by the animal food industry to enhance the n-3 FA content of animal-derived foods. The inclusion of n-3 FA into poultry meat is achieved by feeding ingredients such as flaxseed, canola, fish oil, fish meal, marine algae to broiler bird.

In the present research, the feed of broilers was supplemented with each of flax seed and canola at the rate of 10-20% to improve fatty acid profile of meat (Table 1-2). Fatty Acid determination of omega 3 rich meat was determined by using the analytical instrument Gas Chromatography followed by the sample preparation



Table 1. Fatty acid contents (%) in broiler breast meat

Fatty acids	Control	Flax seed (10%)	Flax seed (20%)	Canola (10%)	Canola (20%)
C _{16:0}	10.680 k	8.926 n	9.940 m	13.770 i	13.980 g
C _{18:0}	4.763 p	5.500 m	5.670 n	4.280 r	5.300 p
C _{18:1}	40.630 c	37.270 e	38.920 d	43.600 b	45.700 a
C _{18:2}	11.530 j	10.280 k	11.373 j	27.600 f	19.800 g
C _{18:3}	0.560 x	3.220 u	4.020 s	3.420 t	2.720 w
n-3	0.560 x	3.220 u	4.020 s	3.420 t	2.720 w
SAF	10.680 k	8.926 n	9.940 m	13.770 i	13.980 g

Table 2. Fatty acid contents (%) in broiler leg meat

Fatty acids	Control	Flax seed (10%)	Flax seed (20%)	Canola (10%)	Canola (20%)
C _{16:0}	9.980 k	8.526 m	9.540 l	12.877 h	12.947 h
C _{18:0}	4.763 p	5.200 o	5.400 n	3.613 r	3.517 r
C _{18:1}	39.600 c	35.600 e	37.820 d	43.60 b	48.700 a
C _{18:2}	10.980 i	10.030 k	10.747 j	33.600 f	30.300 g
C _{18:3}	0.487 t	2.980 s	3.980 q	3.560 r	3.667 r
n-3	0.487 t	2.980 s	3.980 q	3.560 r	3.667 r
SAF	9.980 k	8.526 m	9.540 l	12.877 h	12.947 h

Birds fed on omega 3 rich diets contained high levels of the omega-3, as well as enhancing the taste of “conventionally” grown broilers. It can be easily assumed that meat created by healthy animals will be healthier for people to control the prevailing diseases like high cholesterol, cardiovascular, obesity. Given the positive trends within the food industry, there will be many more options to satisfy consumers with healthful benefits of omega 3 rich meat.

