



**IS CHOLESTEROL IMPORTANT FOR IMMUNITY?**  
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The misconception about the relationship between cholesterol in the diet and human health definitely has had an adverse effect on egg consumption in the U.S. This, in turn, results in a reduction in egg prices and lower profitability for poultry producers.

It is important to know that blood cholesterol in humans is not only derived from dietary sources, but also is naturally synthesized in the body. The amount synthesized in the body depends on the amount consumed in the diet.

When low levels are consumed, the body may be required to synthesize large quantities to meet body needs. The reason the body synthesizes cholesterol is because of its importance in different vital physiological functions. For example, cholesterol is a precursor of different important steroid hormones such as progesterone, estro-

gen, and androgens which are important for reproduction functions. Therefore, maintaining a certain level of circulating cholesterol is essential for proper physiological functions in the body.

To emphasize this point, we conducted an experiment using three genetic lines of mature male Japanese quail obtained from Dr. H.L. Marks, Southeastern Regional Laboratory, USDA. The first line was selected for high circulating levels of cholesterol, the second was selected for low cholesterol levels, and the third was unselected and served as a baseline.

We used two dietary treatments with each line. One diet contained 2,900 kcal/kg ME with 20 percent protein with .5 percent crystalline cholesterol added. The second (control) diet was similar to the first but without cholesterol added.

Total cholesterol in the blood was measured in all birds. To measure the effect on immunity, the activity of lymphocytes were measured by determining the rate of

their division. Lymphocytes are the most important white blood cells in eliciting an immune response.

We found that when we combined results from all genetic lines, adding cholesterol to the diet increased blood cholesterol by 700 mg percent (from 250 mg percent to 950 mg percent). Furthermore, lymphocyte activity of the quail fed cholesterol was reduced when compared to control quail. This indicated that when cholesterol levels were extremely high, the immune response could be inhibited.

However, we also found that when cholesterol levels in the blood were reduced to 167 mg percent in the low line, activity of lymphocytes were also inhibited when compared with the high line that had cholesterol level of 374 mg percent.

These results confirm the notion that a certain level of blood cholesterol is needed to maintain proper immune response.

\*Graduate students in the Department of Poultry Science working with Dr. Mashaly.

## B&T Angus Joins Association

ELIZABETHTOWN (Lancaster Co.) — B & T Angus is a new member of the American Angus Association, reports Dick Spader, executive vice president of the national organization with headquarters in St. Joseph, Mo.

The American Angus Association has more than 27,000 active adult and junior members. Its computerized records include detailed information on more than 12 million registered Angus.

## Jackpot Show July 29

YORK (York Co.)—The Pennsylvania Livestock Association is sponsoring a Jackpot Show on July 29 for steers, barrows, and lambs in conjunction with the Keystone National Rib Cookoff and Music Fest. The Rib Cookoff will run from July 27-30 at the York Fairgrounds and is a fund-raiser to support the Keystone International Livestock Exposition.

All youth ages 8-19 are reminded to consider this event when purchasing project animals this spring. The jackpot show is only for steers or barrows, but ewe lambs and wethers are eligible in the sheep division of this market animal event.

Jackpots for the three shows total a minimum of \$1,600. The champion steer will receive at least \$500, the champion barrow \$250, and the champion lamb \$250. There are guaranteed minimum premiums for the top five placings in each class. A supreme champion of all three species will be selected.

Entry fees are \$20/steer and \$10/barrow or lamb if preregistered by July 10. Each exhibitor will receive two admissions to the Rib Cookoff and Music Fest.

Admission to the Rib Cookoff on Saturday includes country music entertainer Ken Mellons, featuring his hit singles, "Juke Box Junky" and "Working For The Weekend."

For more information and registration forms for the Rib Cookoff Jackpot Show, contact Chester D. Hughes at (717) 394-6851.

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