A Natural Orange Pigment in the Hen’s Diet Affects the Chick’s Immune System
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Did You Know?

- At hatch the:
  - Chick’s immune system is immature
  - Chick has not been exposed to bacteria
- In the minutes, hours and days after hatch:
  - Chicks encounter many species of bacteria – good and bad
  - Chick’s immune system must develop quickly to effectively protect the chick
- In Canada low levels of antibiotics are fed to broiler chickens to prevent disease, maintain health and improve productivity
- Concerns about antibiotic resistance have led to bans on prophylactic antibiotic use in the EU.
- Some nutrients can help the chick’s immune system
  - Carotenoids are group of natural pigments related to vitamin A that give some birds their bright colours
  - Canthaxanthin is a carotenoid pigment

What We Did

- Supplemented broiler breeder hens with:
  - 0, 6 or 12 mg Canthaxanthin/kg of feed.
- Three hen ages: Early, mid and late egg production
- Two chick ages: 1 and 4 days
- Chicks from these hens were hatched and their immune cells were tested for their ability to kill E. coli

What did We Find?

What Does it Mean?

Chicks from younger hens may have a more efficient immune system shortly after hatch

Feeding Canthaxanthin may increase the overall ability of chicks to kill E. Coli

1. The ability of chicks to kill E. coli decreased as hens aged
2. Hen supplementation of Canthaxanthin appeared to increase E. coli killing in day old chicks and in 4 day old chicks from Mid production hens

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