



A Natural Orange Pigment in the Hen's Diet Affects the Chick's Immune System

Melissa Johnson and Doug Korver
University of Alberta

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



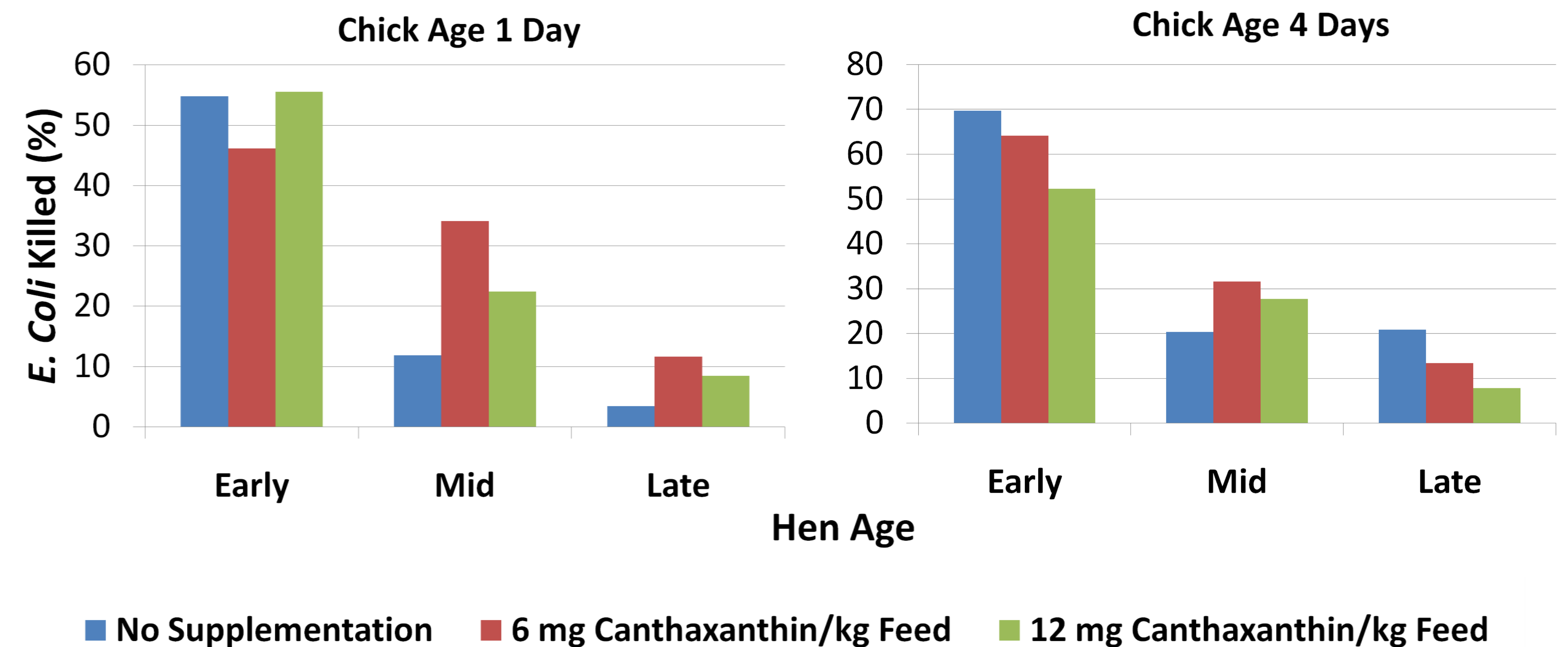
visualphotos.com

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?

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

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*



ruralramblings.com



blog.itriagehealth.com