

## Using dietary thyroxine to induce molting in turkey hens

### What is this research about?

Molting in birds is characterized by the loss and regrowth of feathers. Molting has an effect on the reproductive system of the bird. Molting allows birds to maintain their reproductive health throughout their lives. In the poultry industry molting is used to get a second or third egg-laying cycle. This has economic benefits for the farmer because they do not need to replace their flock with younger birds as often.

Currently, turkey hens may be restricted from feed and water to induce molting. This practice can cause severe stress and serious health and welfare concerns. In Canada this practice is highly discouraged.

Dietary supplementation of thyroxine with a reduction in photoperiod has successfully induced a complete molt in chickens. Thyroxine ( $T_4$ ) is a form of thyroid hormone that has a role in controlling metabolism. The purpose of this study was to determine if a relatively high dose of dietary  $T_4$  could induce a complete molt in spent turkey breeder hens.

### What you need to know:

Dietary thyroxin supplementation was successful in inducing a molt in spent turkey breeder hens. This process can provide economic benefits to farmers and does not cause stress or serious health and welfare concerns to the turkeys like other procedures.

### How can you use this research?

**Turkey producers** can use this research to guide their practices to induce molting in their flocks.

**Poultry policymakers and government organizations** can use this research to ensure policies and recommended practices are evolving with the evidence towards more economically sustainable and animal welfare-friendly procedures.

## What did the researchers do?

The researchers gave turkey hens 40ppm T<sub>4</sub> for 10 days and observed for another 27 days. There were three treatment groups plus a control group (treatment A). Group B received 14 hours of light a day. Group C received 14 hours of light during for the 10 days of supplementation, and 6 hours of light after day 10. Group D received 6 hours of light a day. The factors measured included: feed intake, body weight, egg production, molting, and behaviour.

## What did the researchers find?

Dietary thyroxin supplementation was successful in inducing a molt in turkey hens as in chickens. Most hens treated with T<sub>4</sub> started molt within 8 days of receiving the supplements and finished molt by day 37.

Thyroxin supplementation significantly reduced the feed consumption in all treated groups by at least 56 to 69%. Reduced feed intake was most likely voluntary as a result of a decreased appetite rather than feed avoidance.

Thyroxin supplementation resulted in significant rapid body weight loss in all treated groups. Thyroxine supplementation for 10 days did not induce hyperactivity or stress and did not induce noticeable heat stress due to increased metabolism.

At the end of the trial, no abnormal levels of T<sub>4</sub> were observed. This shows that use of dietary thyroxin is safe.

## About the Researchers:

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