Phytochemicals are plant-derived compounds which have scientifically proven health benefits. They are transported to egg yolk through hen’s feed. The amount and type of phytochemicals in egg yolk can be varied depending on the feed ingredients and processing can alter the bio-availability of these compounds.

**Background**

Canadian Poultry Industry

- **Corn based feed**
- **Wheat based feed**

Rich in phytochemicals (e.g. Carotenoids, Phenolic acids, Phytoestrogens, Alkylresorcinols)

**PHYTOCHEMICALS**

- Act as antioxidants
- Mimic hormones etc.
- Majority are lipid soluble
- Protective effects against cardiovascular diseases/cancers
- Possibly transported to the egg yolk
- Presence of carotenoids and phytoestrogens in egg yolk is reported
- No reports on phenolic compounds/ alkylresorcinols

**Expected results**

We expect to:

- Identify the presence of phenolic compounds and alkylresorcinols in egg yolk and quantify them
- Investigate the relationship between poultry feed and phytochemical content in egg yolk
- Find the effect of processing methods on loss of egg yolk phytochemicals

**Benefits**

Provide evidences on potential health promoting effects of egg yolk

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**Summary**

Phytochemicals are plant-derived compounds which have scientifically proven health benefits. They are transported to egg yolk through hen’s feed. The amount and type of phytochemicals in egg yolk can be varied depending on the feed ingredients and processing can alter the bio-availability of these compounds.

**Methodology**

- Develop methods to extract phytochemicals from egg yolk.
- Use of HPLC and LC/MS-MS to identify compounds of interest
- Develop standard calibration curves for quantification purposes

**Objectives**

- To identify/ quantify the phenolic acids and alkylresorcinols in egg yolk
- To identify the effect of processing methods, on yolk carotenoids
- Prepare phytochemical profile of egg yolk in relation to the type of poultry feed