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Free Choice Feeding for Organic Laying Hens on Pasture:

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Free-range and organic eggs are growing segments of the Canadian egg market, and most are produced on small-scale farms. A major concern for farmers is the high cost and availability of suitable feed ingredients. Feed costs represent 60-70% of the production costs of eggs. The use of high quality, locally grown feed combined with choice-feeding systems may provide a solution.

Laying hens are typically fed complete diets of pre-ground and pre-mixed feed. This one-size-fits-all approach is intended to optimize nutrients based upon the dietary requirements of an 'average' hen. These complete feeds are carefully formulated mixtures of grains (wheat and corn), proteins (soy, peas, and flax), and micronutrients. Complete feeds don't account for the fact that dietary needs can vary significantly depending on a hen's level of production and activity, as well as environmental factors such as ambient temperature, weather and the availability and type of range forage (pasture vegetation).

An alternative to a complete diet is free-choice feeding. Free choice feeding, also called cafeteria-style feeding, allows birds to choose their diet from a number of troughs with different feed components in each. This gives them the

opportunity to balance their own diet. Free-choice feeding systems offer several advantages that can effectively reduce overall feed costs. It does not require mixing or milling of feed, which can significantly reduce feed costs through decreased processing. Additionally, when milling and mixing are not required, farmers are able to source feed ingredients separately, which opens up the opportunity to purchase feed locally or produce their own.



Free Choice Trial at UBC Farm Summer 2013

With support from the [Organic Sector Development Program](#) funded by "[The Canadian Agricultural Adaptation Program](#)" (CAAP) and is administered by the [Investment Agriculture Foundation](#) the UBC Farm investigated free-choice feeding systems with our



pastured laying hens. Our objective was to evaluate the effects of free-choice feeding systems on egg production and hen health in a small-scale organic farm system. We did this by comparing production rates, egg nutritional quality, bird weights, and feed consumption of hens fed a whole grain, free-choice diet, with hens fed a traditional complete diet. In 2011 we developed research methods, and during the summers of 2012 and 2013 we collected data throughout the growing season.



Hy-line brown laying hens on pasture during trial

We found that free-choice feeding resulted in a minor increase in feed intake, coupled with an increase in egg production and no change in feed conversion – a measure of how many grams of feed are required to produce a gram of egg. However, due to the reduction in feed costs realized by free-choice feeding, we saw an overall revenue increase in the free-choice system. In 2012 we saw an 8% revenue

advantage, and in 2013 we saw a 12% revenue advantage. These results are encouraging and represent potential meaningful savings to many small and large flock holders throughout our BC food system and beyond.

Interestingly free-choice-fed hens had higher production rates at times of extreme weather conditions. During the cold wet fall of 2012 the free-choice-fed hens at similar amounts of feed as the hens fed the control diet, but laid more eggs. Similarly, during the hot, dry summer of 2013 the free-choice-fed hens, ate less feed than the hens fed the control diet, but also laid more eggs. The free-choice diet can allow hens to compensate for changes in environmental conditions with less impact on production.

Free-choice feeding affords freedom to the flockholder in sourcing feeds. By removing the milling and precise mixing requirements flockholders are able to produce their own feed components, or purchase from farmers local to their region. This can help facilitate the development of a local grain market, which can help farmers diversify their crop rotation with grains for feed. It also creates a secondary market locally produced grain not suitable for human consumption.

Find full report at ubcfarm.ubc.ca
Questions can be emailed to:
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