

Episode

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INNOVATION

SHOWCASE

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Novel techniques in poultry feed formulation:
A revolution in the poultry enterprise

Featuring Dr. Mohammad Afrouziyeh, Research Associate, University of Alberta



A COMPLEX PROCESS

Nutritionists must consider many economic, nutritional, and environmental factors when designing feed formulations. Least Cost Feed Formulation (LCFF) is a common formulation practice; this method aims to achieve the minimum cost combination of ingredients that satisfies a specific level of nutritional requirements.

LEAST COST FORMULATION

- In conventional LCFF, the formulator establishes a set of fixed nutrient requirements (restrictions) to minimize the diet cost and maximize performance (body weight gain or feed utilization).
- In practice, this formulation method may or may not lead to maximum profit and sustainable production.

'Least Cost Formulation is the minimum cost combination of ingredients that satisfy a specific level of nutritional requirements'

POULTRY INNOVATION PARTNERSHIP

visionary

change

collaboration

opportunity

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Maximum profit formulation is a different approach to designing poultry diets.

FINDING THE RIGHT BALANCE

Allowing product, protein, and energy prices to dictate appropriate nutrient requirements to formulate the most economical diet could give maximum profits. For example, a wide range of dietary energy levels (2,684 to 2,992 kcal of ME/kg) are used by the egg industry. Regardless of the dietary energy level chosen, all nutrients should be balanced in a standard ratio relative to that dietary energy level. Using nonlinear programming methods, diets may be formulated that account for the most profitable energy level while balancing the other nutrients in the diet. The key is to understand what the most profitable energy level is for a specific situation.



This webinar will discuss least-cost feed formulation (LCFF) and maximum profit feed formulation (MPFF) as approaches to deal with economic aspects of feed formulation. In addition, Dr. Afrouziyeh will discuss the margin of safety (MOS), and stochastic programming to account for nutrient variability of ingredients, and multiple objective programming (MOP), which takes into account for both market and nutrient variables. The ultimate goal is to use robust mathematical programming models to deal with nutrient and market fluctuations and achieve the most profitable formula in feed formulation.

The Innovation Showcase is presented monthly by the Poultry Innovation Partnership and hosted by Brenda Reimer & Valerie Carney. Learn more at: poultryinnovationpartnership.ca/innovation-showcase

