


 Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada | Canada ¹⁰⁰


Development of BIF Guidelines for Individual Feed Intake Data Collection: Current Status and Future Direction



BIF Subcommittee on Feed Intake Data Collection

- Denny Crews, AAFC/UoFA, Chair
- Mark Erns, CSU, BIF Board
- Gordon Garstang, TAMU
- Lauren Hyde, NALF
- Matt Jones, Camp Cooley
- Richard Carlson, Genex
- Merlyn Nielsen, UNL
- Sally Northcutt, AAA
- Daryl Strubbehn, ISU
- Rod Hill, UIdaho
- Scott Moore, King Ranch

 Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada | Canada ¹⁰⁰




Introduction

- Our goal is to review literature, add recent findings, discuss, and make recommendations for a standard guideline for the collection of individual feed intake data and reporting measures of efficiency of feed utilization
 - National cattle evaluation (NCE) programs
 - Database uniformity
 - Enable future (meta-) research using existing data
 - Define a standard terminology
 - Maintain a BIF guidelines chapter
 - Outline the need for uniform reporting/evaluation of efficiency

 Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada | Canada ¹⁰⁰




Short Review of Intake and Efficiency

- There is little consistency among the >25 measures of "efficiency" that have been proposed or published
- Although traditional and most common, FCR does not lend well to genetic improvement or across-segment comparison
 - Most measures suffer under genetic antagonisms
- Desirable efficiency measurements are based on intake
 - Must distinguish measured versus predicted intake
- Current thinking seems to support a "methodological" concept of efficiency for genetic, statistical and biological reasons
- Sorting out intake is still the key issue, hence this committee

 Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada | Canada ¹⁰⁰




Logistics of Sourcing Data

- What populations currently or will exist as likely data sources?
 - Experimental
 - Field
- Central bull tests
- Experimental progeny tests
- Animal type/gender/age considerations

 Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada | Canada ¹⁰⁰


Defining (and Refining) Test Criteria

- **Length of test**
 - Most published reports agree: 35-45 d for intake, 70+ d for ADG
- **Minimum phenotyping**
 - Intake yes, but supporting data as well (for tests & animals)
 - Must distinguish predictions versus measurements
- **Diet**
 - Minimum standards: ingredients, analysis, gender
 - As-fed vs. DM basis
- **Hardware and software**
 - Probably shouldn't impose strict standards, but needs to be known
 - Individually housed animals?

 Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada | Canada ¹⁰⁰


Database Recording and Reporting

- **Standard database design**
 - We should be recording intake, but also expand to accommodate measures of efficiency
 - Define a minimum criteria available in a database
- **Should be complete enough for genetic evaluation**
 - Predict relevant EPD and monitor genetic association(s)
 - This does not mean imposing pedigree depth minimums



Other Considerations

- **What can we use from previous efforts**
 - Australian resources (www.agric.nsw.gov.au/reader/6964)
 - BREEDPLAN (www.beef.crc.org.au/genetics/level_g/level_g.htm)
 - Ongoing central tests (Alberta, Texas, elsewhere)
- **Markers as indicators of intake (and efficiency)**
 - Genetic (SNP and SNP-panels)
 - Physiological (IGF-1, Leptin, others?)



I would like to share your input with the committee.

Denny Crews
AAFC-Lethbridge
403-317-2288
dcrews@agr.gc.ca

