

Overview of the Goat Edition to the BRaNDS Software

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Summary and Implications

The Goat Nutrition Standard Edition Modules are designed for ration evaluation and manual formulation of growing and mature dairy, meat and mohair goats. The guidelines outlined in the National Research Council's 2007 publication "The Nutrient Requirements of Small Ruminants" serve as the primary basis for the formulation. The software has been made available to the general public through Iowa State University Extension Distribution: 515 294 5247 or <http://store.extension.iastate.edu> and do a key word search "goat".

Introduction

BRaNDS is an acronym which stands for Beef Ration and Nutrition Decision Software. This software was developed originally by the Iowa Beef Center to provide a practical software package that utilizes the proven research in beef nutrition in the formulation of beef diets. The concepts implemented in the software design lend themselves well to diet formulation for other production and hobby livestock including goats. Thus the BRaNDS template was used in the design for the user's interface, and the National Research Council's 2007 publication "The Nutrient Requirements of Small Ruminants" was then used as the guideline for the actual requirements for goats in the various stages of their lifecycle nutrition needs. Testing of the model and the interface then involved the cooperation of some actual producers and one consultant. This aspect is ongoing since the use of goat nutrition software is somewhat limited when compared to beef cattle software, thus errors are a bit more difficult to uncover.

Materials and Methods

Computer System Requirements

This software utilizes Microsoft Excel to display information. Therefore, users will need to have a computer system with MS Excel installed. Any version of Excel installed on a Windows or Mac capable of opening an "*.xls" file will work. Reports are preformatted and can be printed in "*.pdf" format for emailing if pdf creator software is installed.

General Features

A default feed library is included with a fairly inclusive list of ingredients with their analysis included, but this library is designed for easy updates with the user actual

feedstuffs and nutrient values the producer would obtain from a commercial feed testing laboratory.

Dry Matter Intake, Energy, Protein, Fiber, Vitamin and Mineral components can be addressed in each formulation. The units used for all these measures are in English standard measures rather than metric since the program is designed for commercial use in the United States. The actual requirements are then calculated for each of these categories, but in the primary formulation screen the user has the overall requirement presented in terms of the percent of the total requirement met by the existing ration. The actual details of quantities of nutrients needed for maintenance, body condition gain, pregnancy, high activity, growth or lactation can be observed as well. Energy requirements are based on net energy and TDN as used in cattle and sheep formulations. Protein provisions are based on the metabolizable protein system as used by the beef and sheep versions of BRaNDS. Physically effective neutral detergent fiber (peNDF) is listed and recorded on the feeds in the Goat Edition, however, this is still a developing area for goats so at this point the program allows the user to track the levels, but fails to give firm recommendations on how much peNDF is needed.

Four preformatted reports have been built into the program with an option to build a custom user's report. A batch sheet for feed mixing, a ration summary, a supplement report that indicates what needs to be added to the existing ration to balance it and diet analysis report are the standard reports. Diet cost and cost per unit of weight gain or per day are included in all results along with the status on adequacy of each nutrient.

Results

This software is new and unfortunately product testing was somewhat limited due to the relatively small number of producers and consultants working with goat operations in central Iowa. Because of this it is expected that updates will be necessary in the near future as more individuals test this product. Therefore, the Iowa State University Extension Store, which distributes the software, allows free updates to this software in order that the users can update easily when the product changes.