



Zürich, May 27, 2013

Topic: multiple constraint search in the Swiss Feed Database

Feed rations for animals are optimized to meet nutrient requirements. The efficient search for feed types that best match these requirements has to rely on query options that allow multiple, user defined constraints in the nutrient selection step. So far, the search function is restricted to feed type selection and nutrient selection. The query results can be sorted in an ascending or descending order but just one column at a time. A search additionally based on user defined nutrient ranges would help to solve many real world situations in an efficient way.

Imagine the following problem: a feed mill has to finish the manufacture of a compound feed for pigs before the week-end. Unfortunately, there is a shortage in wheat. Very rapidly, an alternative has to be found. Since the target animals are pigs, the choice of nutrients are as shown in figure 1.

	min	max
VES (MJ/kg FS)	13.5	15
RP (g/kg FS)	100	140
LYS (g/kg FS)	2.5	4.5
MET (g/kg FS)	1.5	3
VDP[s] (g/kg FS)	0.7	1.2

The goal of the project is to implement the new functionality that contains the following elements:

- for the selected nutrient(s) a user can specify the minimum and maximum value. Then, the query result will display only those feed samples for which the nutritive values fall into the given range.



- by default, the system computes the maximum and the minimum value of a range based on the nutritive value that are actually stored in the database.
- The implemented functionality must be optimized for the fast response time by a careful design of an algorithm, database indexes or data views.

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Starting date:

Ending date:

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