



# The Tameus Project

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## People

### ▶ Management and Curation

- ▶ Prof. Dr. Michael Böhlen
- ▶ Dipl. Ing. Monika Boltshauser
- ▶ Dr. Giuseppe Bee

University of Zürich

Agroscope

Agroscope

### ▶ Development and Maintenance

- ▶ Francesco Cafagna, PhD Student
- ▶ Andrej Taliun, Postdoc

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University of Zürich

### ▶ Data Curation

- ▶ Dipl. Ing. Annelies Bracher

Agroscope



## Main Objectives

- ▶ Continue the public service offered by the Feed Database
  - ▶ hosting and maintenance,
  - ▶ continuous evolvement with the new detailed data,
  - ▶ advanced querying on various properties of the feed data.
- ▶ Incorporate the Feed Database into the teaching activities
  - ▶ narrowing down and defining problems,
  - ▶ curation of the master and bachelor students,
  - ▶ database access and integration of the results.
- ▶ Joint research on processing and analyses of the feed data
  - ▶ analyses and aggregation techniques of the multi-dimensional time-varying data.



## Work Packages

- ▶ WP1. Enrich the database with historical information

old queries:

- ▶ what is current containment of phosphor in corn?

new queries:

- ▶ how much of phosphor was in corn in 2005?
- ▶ in average, how much of phosphor was in corn between 2005-2010?
- ▶ during which year the containment of phosphor decreased mostly?



## Work Packages

- ▶ WP2. Aggregation of large amounts of historical data with error guarantees:
  - ▶ to reduce the cardinality of the data for trend analyses, density computation and visualization.
- ▶ WP3. Determine correlations between feed components:
  - ▶ to reduce the aggregation error in time periods when the data is sparse,
  - ▶ to clean and classify the feed data,
  - ▶ to reduce the cost of sampling and chemical analyzes.



## Work Packages

- ▶ WP4. The Swiss Feed Data Warehouse
  - ▶ advanced repotting/querying that includes data quality and confidence, and possibility to trace previous query results;
- ▶ WP5. Curated Swiss Feed Data
  - ▶ import of the raw data with varying level of detail;
  - ▶ pre-processing(clean and classify) the raw data;
  - ▶ increased availability of spatial, biological and technical properties of the feed data;
  - ▶ data from new sources and surveys on data quality



## Student Projects

- ▶ 10 projects defined and 8 are finished in the first year:

Students	Project	Outcome
Yannick Widmer, Samuele Zoppi	short project	data import, temporal database
Zafer Adiguzel	short project	comparison of regressions on the feed data
Samuele Zoppi	bachelor thesis	aggregation of measurements from the most recent history
Kristin Kruse	short project	visualization of the geographical information
Hannes Tresh	bachelor theses	computation of derived nutrients
Andras Hee, Basil Philipp	course project	radius search on maps
Christian Bosshard, Michael Enz	course project	visualization of animal density



## Meetings and Results

- ▶ we organize regular meetings between Agroscope and UZH

Date	Results
February, 11th	setup of the database, two student projects
April, 27th	project web page, wish and mail lists, new student projects
June, 17th	collection of the raw data, two bachelor thesis
July, 15th	first version of geo application with hey data
August, 19th	importing detailed temporal data of the last decade
October, 21th	import of the data, applications for data maintenance are complete, new student projects
November, 18th	beta version of the online feedbase
December, 16th	stable version of the online feed base



## Meetings and Results

- ▶ we had built the data warehouse with 2.4 millions of nutrients measurements,  $10^5$  feed samples, more than 900 nutrients and 1100 feed types;
- ▶ we enhanced the database with geographical information, biological and technical properties of the feed database.
- ▶ we had designed and implemented rich search web application.



Thank You