



Zürich, November 13, 2012

Topic: Embedding animal density information into the Swiss Feed Database

There is strong evidence for regional influences on hay quality which are explained by altitude, botanical composition, production intensity and fertilizer intensity. In forage production including hay, the level of available fertilizer in the form of manure is directly linked with animal density. It is expected that high animal density results in high phosphorous content. The interesting questions are: which nutrients in hay samples do correlate with animal density? How can we visualize animal density and hay quality simultaneously? How are hay samples distributed over the different animal density classes?

Data on animal density are available on a communal basis whereas data on hay nutrients are given on a postal code basis. A community is not always identical to a postal code and vice versa. One challenge is integrate the data on animal density into the Swiss Feed Database. The visualization of the spatial distribution of animal density classes can be solved by embedding color plots into Google maps. The color plots are computed with a help of Kernel regression technique. The deliverables of the project are:

1. Design of an extension to the SQL schema of the Swiss Feed Database that supports the data on animal density;
2. Implementation of the SQL schema and import of the animal density;
3. Visualization of the animal density in on-line web application using color plots;
4. Report of 10-15 pages;

The list of the literature is:

1. Silverman, B.W. (1986). Density Estimation for Statistics and Data Analysis. Chapman and Hall, London.



2. Andrin Betschart. Visualization of the Varying Spatial Density Information in the Swiss Feed Database. Bachelor Thesis.

Supervisor:

- Andrej Taliun

Starting date: 23.10.2012

Ending date: 19.04.2013

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A handwritten signature in blue ink, appearing to be 'MB' followed by a cursive flourish.

Prof. Dr. Michael Böhlen