MultiSward

Multi-species swards and multi scale strategies for multifunctional grassland-base ruminant production systems

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E-learning and e-training centre in an upgradable version

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Summary

Objectives
The Deliverable is related to the construction of an e-learning centre dedicated to grasslands. This e-learning centre must include all information related to grasslands and the various services provided by the type of land use.

It has to be made available in four languages at the end of the project.

Rationale:
It was chosen to use an open source software, based upon the Wiki technology. DokuWiki was selected.

The frame of the sheets was stabilized in order to get an easy access to all information and to make it easy to include new information.

The first release was set, first in French and then translated to English.

This first release was validated by the consortium and an Editorial committee was set.

Access was given to all members of the Multisward consortium for edition of pages.

A second release was provided in M28 and the system proved to presently work in routine.

Every year, the versions of both languages will be equalized. At the end of the project, two more languages will be made available.

Teams involved:
Partner 1 (INRA) is the main team involved in this deliverable.
Access is given to all members of the consortium.

Geographical areas covered:
The deliverable is relevant for all European countries.
Statistical data from many European countries will be regularly included.
E-learning and e-training centre in an upgradable version

1. Objectives

Based on the development in agriculture of the Web based technologies, an e-learning and e-training centre (ELC) was planned on the web presenting information on grasslands and their multifunctionality. Information already available at the start of the project (for example gruenland-online.de) as well as information obtained and applications developed during the project will be included. This ECL will be a valuable resource for farmers, rural extension services and students, stakeholders and citizens. The ECL will include several sections which will be progressively enriched by the data provided during the project and/or demand from stakeholders:

- Synopsis of statistical data related to grasslands in the EU and data related to environmental impacts and benefits when available. These data will be presented either as tables or as maps and available for online loading.

- Comprehensive information on the species (grasses, legumes, forbs) commonly found in sown and permanent grasslands: botanical data, taxonomic keys for species identification, physiological aspects of the growth and development of the various species. This section will also include a resource for identification of the main pathogens and pests which may be met on grassland species in Europe. Graphs, photographs will be a major resource. We will assess the possibility to implement the IDAO (Computer Assisted Identification) system created by CIRAD for tropical weeds

- Grassland agronomy. This will include all the information available on the effect of exploitation regimes and agronomic practices on production and quality of the feed. Decision tool kits will be made available in this section in order to be used by the farmers and rural extension services.

- Comprehensive analysis of the links between grasslands and environmental benefits. The range of environmental benefits will be presented, with an easy access to a range of environmental indicators.

- Relevant regulations. A synthesis of all regulations relevant to grasslands, herbivores and grassland protection will be made available.

- Relevant scientific literature. The ECL will report the most relevant scientific publications and review papers. As such, the ECL will also be a resource for students for getting access to the most recent scientific literature.

The ECL will be developed using open source software so that it can easily be transferred to national grassland societies at the end of the project. At the end of the project, national grassland societies and/or the European Grassland Federation will be given the opportunity to take over this e-learning website and to feed it with additional information relevant to their national or regional conditions.

The site will be continuously upgraded and two languages (French and English) are used during the duration of the project. At the end, it will be made available in four European languages (English, German, French and Polish) in order to maximise its impact on European agriculture.
2. Implementation

2.1. Selecting an open source software

On the basis of a draft proposed by INRA in charge of the WP6, the Multisward consortium decided to use a Wiki system in order to make it possible an easy and permanent upgrading of the e-learning centre. A selection of the open source softwares was undertaken in order to identify the most convenient one, which would be easily handled and used by all members of the consortium. After testing a set of open source softwares, we identified the DokuWiki as a suitable one. It was relevant with the final objective to have the same e-learning centre in four different languages.

2.2. Setting the frame

For an easily use, it is important that the structure of the sheets is well established. A specialized computing company was appointed to finalise the frame of the sheet, in order to have the adequate structure and avoid future bugs.

This was especially important, as the final objective is to transfer the site to national grassland societies. Thus, the sites corresponding to the four languages will be mirrors.

The frame was set in M12 and proved to work satisfactorily. It was approved during the consortium meeting in M12. In M12, an Ed Com was set for regularly checking the content of the e-learning centre, analysing the discussion streams opened by the visitors and reviewing the modifications proposed by members.

2.3. Production of the first release

A first release was produced in M12 in French, by INRA, using the material available from previous research results and from the literature.

During a consortium meeting, a name of the e-learning was selected: Encyclopedia pratensis.

By M18, this first release was made available in English. In M23, it was made open to all members of the consortium who wanted to have the ability to modify the pages. For doing so, login and passwords were given to all consortium members who asked for it. It was presented during the consortium meeting in M24 and validated.

2.4. Production of the second release

In M28, a new release was made available. It included an upgraded structure of the e-learning center and a new set of pages was added.

This system has now two languages and runs smoothly to include contributions of all members of the consortium. It is also open to contribution from outside. This can be done either through the opening of discussion streams in each page or by asking the webmaster for login and passwords.
3. Achievements

3.1. URL

The URL of the e-learning centre is

French pages:

English pages:

This copy of screen gives the structure of the site with the logo of the project, the acknowledgement of the support of the Commission, the access to the four languages (two are available presently), the table of contents related to the page presently open and the four types of action for the visitor:

- Article: reading the page
- Discussion: setting discussion stream related to the page or feeding those which already exist
- Edit this page: for those who have login and password, it makes it possible to edit the page and insert new information. This has to be done using the Wiki language, which is very simple
- Old revisions: it shows the previous versions of the page and indicates the dates of revision and the login name of the person who modified it
3.2. Content

The architecture of the e-learning centre was defined to cover all aspects related to grasslands and the various functions and services provided by grasslands.

The following topics are now documented:

- Grasslands and fodder crops
  a. Definitions
  b. Agricultural areas
  c. Distribution in Europe
  d. Plant species
  e. Functioning of the plant cover formed by grassland
    i. morphogenesis of plants
    ii. plant physiology
    iii. species composition
  f. Harvesting and conservation methods
  g. Seeds and varieties required to establish temporary grasslands and fodder crops

- Domestic herbivorous animals
  a. Livestock populations
    i. Cattle
      1. Dairy cows
      2. Suckling cows
    ii. Sheep
    iii. Goats
  b. Detailed analysis by country
    i. France
    ii. Great Britain
    iii. Germany
    iv. Ireland
  c. Animal performance

- Farmers and stock breeders

- Environmental services
  a. Reducing soil losses
  b. Reducing nitrogen leaching
  c. Reducing energy consumption and greenhouse gas emissions
  d. Preserving biodiversity

- Glossary
For every page, a list of literature references is provided at the bottom of the page. This makes it possible to get further details on the items which are documented in the e-learning centre. A special effort was also paid to illustrate the site with figures and tables.

In the pages dedicated to the description of species, a link was also made to other websites with botanical information.

### 3.3. Volume

In M30, the e-learning centre includes 150 pages in the two languages.

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**Conclusion**

The e-learning centre is effective.

The public of the site was identified with the main targets being the farmers, the rural advisors and the persons involved in education (teachers and students).

Its structure has been defined to be the most simple and the easiest to handle and to upgrade.

Its architecture was defined to cover all aspects related to grasslands which would be of interest for any visitor of the site.

The site will be continuously upgraded and two languages (French and English) are used during the duration of the project. At the end, it will be made available in four languages, all four being mirrors of each other.

The system was designed so that it will be easy to transfer the structure and the content to the national grassland societies at the end of the project. It will be the responsibility of these societies to carry on the upgrading of the e-learning centre after completion of the Multisward project.