

Leader of the *Ad Hoc* action: Zhivko DucheV, Agricultural Academy, Sofia, Bulgaria

New web tools in EUGENA portal

1. Objectives (Summary)

- Introduce in EUGENA the persistent identifiers used now by FAO and automate the exchange of the breeds names from DAD-IS/EFABIS to EUGENA.
- Keep the option in the interface to enter data for breeds which are currently not present in DAD-IS/EFABIS.
- Add a tool for export genebanks collection data at country level in a format suitable for upload in DAD-IS/EFABIS.
- Extend the portal with a field recording the implementation of quality management system in a given genebank.

2. Activities in the past year and output/results

This ad hoc action is a follow up on the AHA “Improving interoperability of the databases used in AnGR management”, where the one of the proposals was to “Develop further the EUGENA portal to get automatically the breed names from DAD-IS”.

The kick-off meeting of the AHA was held online on 21 February 2025. Representatives of Montenegro, The Netherlands, Portugal, Spain, Serbia, Bulgaria and the IT company Comtechsys LTD were brought together in this meeting, The project schedule was presented by Zhivko DucheV. A two months development phase was foreseen for software development and internal testing, followed by loading the current relevant data from DAD-IS/EFABIS in EUGENA and linking current data in EUGENA with the permanent IDs. It was stressed that in case of discrepancies in a certain gene bank data, the development team will communicate directly with the respective gene bank to solve the issues. After a successful tests by at least 2 genebanks the new tools will be presented to EUGENA network in a dedicated meeting.

The development was started according to the schedule and the design of the new database structure and functionality was ready in time. The AHA team contacted also DAD-IS development team to clarify some issues with the respective APIs. The token, needed by EUGENA, for calling the DAD-IS APIs was also renewed.

In April 2025, a representative of the Netherlands approached the EUGENA team with request to evaluate the possibility to accommodate in the development the current setup of their gene bank. In short, the request was to have an option in EUGENA to export data from multiple breeds in EUGENA to one breed in DAD-IS. After discussion with the software

company and taking into account the added value of such information it was decided to modify the design of the system to be able to record in EUGENA 3 types of national breed populations:

1. Breeds present both in EUGENA and DAD-IS
2. Breeds present only in EUGENA and not linked to DAD-IS breed
3. Breeds present only in EUGENA and linked to DAD-IS breed

This setup allows for linking multiple EUGENA breeds to one DAD-IS name. The design was finalized and the following new software tools were developed:

- EUGENA administrators module, separated from the EUGENA public page (Fig.1).
- EUGENA „DAD-IS“ tool for management of Species names, Transboundary breeds names and Breeds names received from DAD-IS APIs (Fig. 2).
- EUGENA „Settings“ tool for management of Species names, Transboundary breeds names and Breeds names in EUGENA (Fig. 3). This tool also handles the linking of EUGENA breeds to DAD-IS breeds (Fig. 4).
- New QMS field implemented in EUGENA public page (Fig. 5) and in the genebank data entry interface
- New export tool for exporting aggregated file with ex situ in vitro data on country level according to the DAD-IS format (Fig. 6).

The current breeds' data for all countries in EUGENA was manually linked to respective breeds in DAD-IS. During this process the representatives of genebanks from Slovakia, The Netherlands, Hungary, Spain were contacted in order to clarify the linkage of the breeds. The current state of the AHA was presented to the WG Documentation and Information and to the WG Ex situ conservation on the ERFP WG meeting 06-07 May 2025 in Athens. There, also other special gene bank situations were discussed, which cannot be handled currently by EUGENA.

On 2nd of June the EUGENA members were informed about the new QMS field, implemented in EUGENA and asked to provide data for this field. The responses from the genebanks were entered in the EUGENA database.

In June the export tool was ready. Export files were generated for all countries in EUGENA, having at least one genebank and sent by email to experts from the countries to confirm that export is functioning as expected.

The final meeting of the AHA was held on 29 July 2025. On this occasion, the new tools were presented to members of EUGENA network from Austria, Bulgaria, Hungary, Latvia, Poland, Portugal, and Spain. A discussion was raised who should have access to the tool for exporting data to DAD-IS/EFABIS, and it was stressed that the export file is intended for the National Coordinator of the respective country. The chair of the ERFP WG Ex situ conservation, Ewa Sosin and the representative of Spain Fernando Tejerina congratulated the team for the good work, stressing the importance of this action, which addresses the

recommendation of the AnGR Strategy - “ Improve interoperability of population and genebank data with other relevant databases“. With this meeting, the AHA was officially completed.

4. Plans and priorities for the rest of the year.

The AHA has concluded its work.

5. Screenshots of the new tools

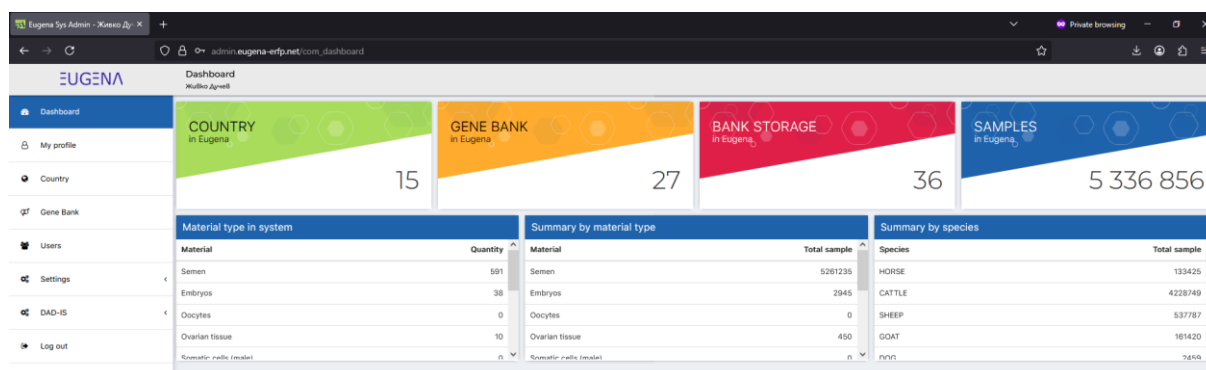


Fig. 1. New dashboard in EUGENA administrator's module

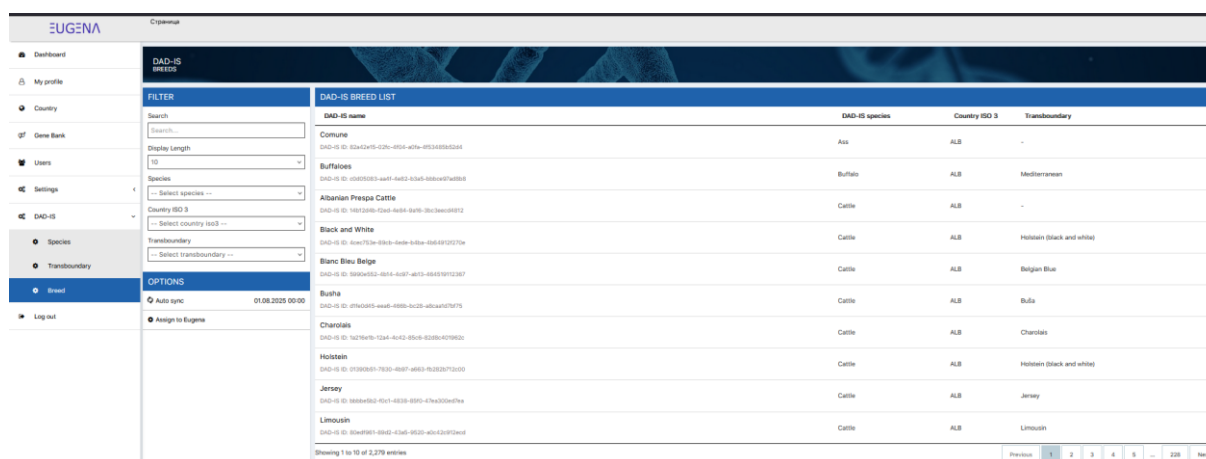


Fig. 2. New “DAD-IS” section in EUGENA administrator's module

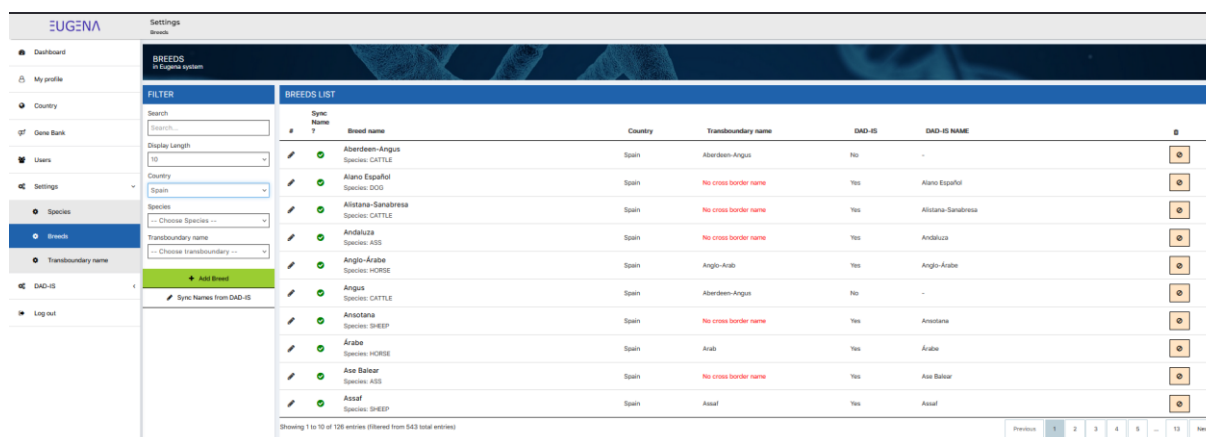
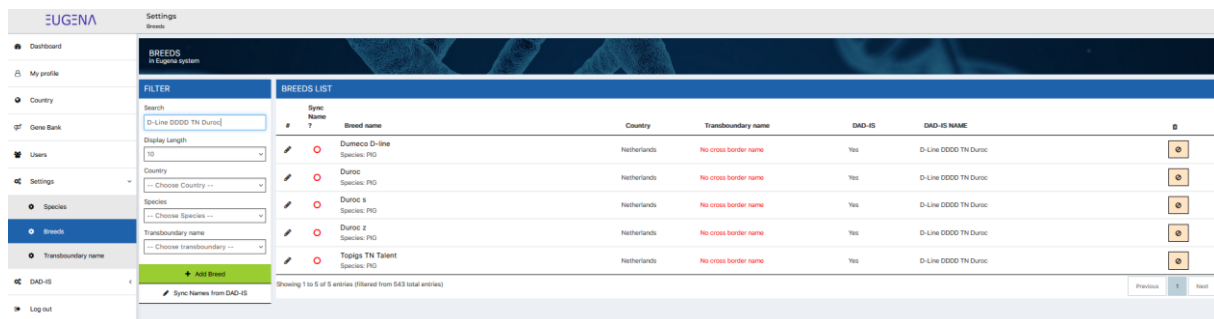


Fig. 3. New “Settings” tool for managing the Species names, Transboundary breeds names and Breeds names in EUGENA. Examples of breeds from EUGENA linked and not linked to DAD-IS name



#	Sync Name	Breed name	Country	Transboundary name	DAD-IS	DAD-IS NAME	
1	Dumexce D-line	Dumexce D-line	Netherlands	No cross border name	Yes	D-Line DDDD TN Duroc	
2	Duroc	Duroc	Netherlands	No cross border name	Yes	D-Line DDDD TN Duroc	
3	Duroc	Duroc	Netherlands	No cross border name	Yes	D-Line DDDD TN Duroc	
4	Duroc	Duroc	Netherlands	No cross border name	Yes	D-Line DDDD TN Duroc	
5	Topigs TN Talent	Topigs TN Talent	Netherlands	No cross border name	Yes	D-Line DDDD TN Duroc	

Fig. 4. Multiple breeds in EUGENA linked to one breed in DAD-IS



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QMS:	Yes		

Fig. 5. New QMS field in EUGENA public page

EUGENA

Country

All countries in Eugena system

Dashboard

My profile

Country

EXPORT DATA

from Bulgaria

Back

Download exported data file: Bulgaria_20250812_342748_889672525-5638.csv

Country	Species	Breed	Year	DNA Samples	DNA Donors Total	DNA Donors Males	DNA Donors Females	Embryos Samples	Embryos Donors Total	Embryos Donors Males	Embryos Donors Females	Somatic Samples	Somatic Donors Total	Somatic Donors Males	Somatic Donors Females	Semen Samples	Semen Donors Males	Oocytes Samples	Oocytes Donors Females
Bulgaria	CATTLE	Aberdeen Angus	2025	0	0	0	0	0	0	0	0	0	0	0	0	2316	11	0	0
Bulgaria	CATTLE	Montbeliard	2025	0	0	0	0	0	0	0	0	0	0	0	0	7998	8	0	0
Bulgaria	CATTLE	Bulgarsko simentalno govedo	2025	0	0	0	0	0	0	0	0	0	0	0	0	2336	4	0	0
Bulgaria	CATTLE	Iskarsko govedo	2025	0	0	0	0	0	0	0	0	0	0	0	0	54211	6	0	0
Bulgaria	CATTLE	Bulgarsko rodopsko govedo	2025	0	0	0	0	0	0	0	0	0	0	0	0	29166	49	0	0
Bulgaria	CATTLE	Bulgarsko cherveno govedo	2025	0	0	0	0	0	0	0	0	0	0	0	0	7238	7	0	0
Bulgaria	CATTLE	Jersey	2025	0	0	0	0	0	0	0	0	0	0	0	0	1855	8	0	0
Bulgaria	CATTLE	Bulgarsko kufiyao govedo	2025	0	0	0	0	0	0	0	0	0	0	0	0	17316	17	0	0
Bulgaria	CATTLE	Podolsko kasovogo govedo	2025	0	0	0	0	0	0	0	0	0	0	0	0	7000	7	0	0
Bulgaria	CATTLE	Black and White	2025	0	0	0	0	0	0	0	0	0	0	0	0	140508	154	0	0
Bulgaria	CATTLE	Simental	2025	0	0	0	0	0	0	0	0	0	0	0	0	16693	21	0	0
Bulgaria	CATTLE	Charolais	2025	0	0	0	0	0	0	0	0	0	0	0	0	3500	7	0	0
Bulgaria	CATTLE	Bulgarsko vino govedo	2025	0	0	0	0	0	0	0	0	0	0	0	0	1778	2	0	0
Bulgaria	CATTLE	Limousin	2025	0	0	0	0	0	0	0	0	0	0	0	0	10598	22	0	0
Bulgaria	CATTLE	Brown cattle	2025	0	0	0	0	0	0	0	0	0	0	0	0	39694	47	0	0
Bulgaria	CATTLE	Hereford	2025	0	0	0	0	0	0	0	0	0	0	0	0	446	5	0	0
Bulgaria	BUFFALO	Bulgarska Murra	2025	0	0	0	0	0	0	0	0	0	0	0	0	24226	28	0	0

Fig. 6. The new export tool for preparing file in DAD-IS format