

**‘Characterization of the indigenous and improved Podolic cattle
breeds and identification of threats for extinction in global
challenges’**

ERFP project



Debrecen

Apetlon – Backa Topola – Budapest - Perugia

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1. Introduction

The Podolic cattle group is a well spread population of relative cattle breeds from Ukraine through Carpathian basin and the Plain of Pannonia up to the Italian Peninsula.

The name of “Podolic”, however, is questionable as cradle of origin, there are many experts for the authentic geographic region as birth place in Podolia (Ukraine) and there are many arguments against it.

There are local breeds in the group, and there are improved beef breeds as well, there are long horned breeds and there are short horned ones. In the planned book there are descriptions of the production in different climatic conditions, and it is an interesting story, how several relative breeds could or can accommodate in different regions.

Thus, for the breeders of some Podolic breeds the further selection is an important task in order to maintain the valuable genes in world concurrency. There are other Podolic breeders, whose duty is the conservation of genetic resources and to work for survival.

An important aspect is for Podolic cattle breeders to join to conservation of genetic resources of farm animals and to protection of nature. Another aspect is besides the conservation and management of maintenance the production of more and more valuable local products. It is important to develop the popularity of healthy and nature protected food among the consumers.

The management and promotion of associations of Podolic cattle breeds is also important task which can be the key for survival..

The role of physical workers should not to be forgotten, because without them all the efforts of different national and international organizations would have been without any success.

In the framework of this international collaboration protected by ERFIP there were meetings in Matera (Italy), Backa-Topolya (Serbia), Apetlon (Austria) and Debrecen-Hortobágy (Hungary) with invitation of other breeders of other “Podolic” countries. Discussions during these meetings contribute to the knowledge of the past, present and future of the breed group.

Thus, the aim of the project has been the clarification of different unanswered questions and summarize the data of past or present, solutions and methods from one or more Podolic cattle breeders and to give example to the others.

The detailed results are summarized in a printed book according to the plan of the project.

2. The aim of the project

In the Podolic cattle group there are local and improved breeds in several countries. The first step should be to establish the taxonomic position and relations of similar breeds. Therefore the description of different breeds is necessary and to gather the laboratory results, based on the literature. Study on the historic background, the possible utilization of improved breeds and exploitation of the rusticity of local breeds as well as the combination of them will be involved in the project. It is a crucial need to elaborate good programs for a sustainable breeding strategy. Utilization the possibility for producing local products and promoting different niche markets belongs to the objectives as well as recommendation for economical evaluation.

The breeding strategy to be elaborated must contain aspects of preservation of genetic resources and diversity within the breeds for the future and at the same time recommendation to actual utilization of special products.

The aim of the project is to establish cooperation between the breeders of the group. The role of subsidies in order to avoid the danger of extinction in international comparison must not be neglected. To give a personal importance and atmosphere to effective work four meetings are organized for changing of experiences.

The results of two years work should be summarized in a book.

3. Participants and co-authors

Hungary

National coordinator T.Szobolevszki

University of Debrecen

Dr B. Béri manager

Hungarian Grey cattle breeders Ass'n

Director I. Gera

Italy

National coordinator D. Matassino

ANABIC Dr. F Filippini

Austria

National Coordinator B.Berger

National Park Neusiedlersee

Director K. Kirchberger

Serbia

National coordinator. S.Stojanovic

Private breeder Sz. Truzsinszki

In order to complete the topic and to extend the text in other countries besides the project participants other coauthors were requested to take part as contributors and authors on the preparation of the study on Podolic cattle.

The list of authors of planned book:

Austria Kirchberger K., Reinprecht V.

Croatia Ivankovic A., Ramljak J.

Greece Ligda Ch.

Hungary Béri B., Bodó I., Gera I., Maróthi-Agóts Á., Radácsi A.

Italy Filippini F., Matassino D., M. Mansone

Romania Bacila, V. Vidu, L.

Serbia Holló D., Stojanovic S., Truzsinszki Sz.

Ukraine Guziev I.V., Chirkova O.P., Podoba B.E., Godovanets L.V., Glazko V., Glazko T.,

4. The work done during the execution of the project

Conferences and meetings

1st 2009. 07. 09. Matera (Italy)

2nd 2010. 05. 09 Backa-Topola (Serbia)

3rd 2010. 11. 17. Apetlon (Austria)

4th 2011. 05. 26. Debrecen (Hungary)

1st Workshop 2009. 07. 09. Matera (Italy)

Results of the first meeting

* Discussion on the present status and possible opportunities of the Podolic cattle breeds with the representatives of the countries breeding Podolic cattle. Scientists of the following countries were present and have given papers, which are summarized in the proceedings of the conference organized by ANABIC.

Italy, Greece, Ukraine, Hungary, Turkey, Serbia, Croatia

* The elaboration of a questionnaire was carried out in order to be filled by all the participant countries having Podolic cattle. The following questionnaire was elaborated and sent to the possible participants:

Questionnaire related to the ERFP 2009 PROJECT

The name of your breed (English and local name):

- | | |
|---|---|
| <p>1. What do you know about the origin of name of the breed group "Podolic cattle"?</p> <p>What breeds do you think belong to the Podolic cattle group?</p> <p>What do you think is common in the Podolic cattle breed group?</p> <p>2. Characterization: (phenotype, genotype of your breed)</p> <p>conformation:</p> <p>colour:</p> <p>production data.</p> <p>endangeredness:</p> <p>genetic comparison of DNA (data of previously performed studies, if any)</p> <p>population size in 1900 -1950 - 2000 – 2009 (cows and total):</p> <p>Please attach actual photos of bull, cow, calf and herd!</p> <p>3. History of the breed</p> <p>literature data:</p> <p>Please attach archive pictures, if you have any!</p> | <p>4. Portrait of the breeders</p> <p>traditions:</p> <p>customs:</p> <p>stories:</p> <p>products, tools of herdsmen:</p> <p>Please attach photos!</p> <p>5. Utilization</p> <p>milk - beef - work</p> <p>production systems:</p> <p>6. Breeding programs</p> <p>improving</p> <p>conservation</p> <p>7. Economy</p> <p>local products:</p> <p>marketing:</p> <p>subsidies:</p> |
|---|---|

* A plan was decided for cooperation, data collection, sharing information of countries having Podolic cattle out of the project (Greece, Turkey, Ukraine, Croatia, Romania).

* The next meetings were decided : in Serbia – in Austria - and the last one in Hungary

2nd Workshop 2010. 05. 09 Backa-Topola (Serbia) **Results of the second meeting**

* The general topic of the meeting was a discussion on the local products

The importance was emphasized, because it is a possibility also for endangered breeds for establishing a local market and to harmonize the prices. Besides the raw meat the processed products are also important sausages etc.

* The meeting was illustrated by a tasting program for the different products, where besides the home products Hungarian, Austrian sausages took part as well.

* From Italy a contribution was delivered by Donato Matassino.

* An important decision of the participants of the meeting was the involvement of other countries and if necessary to support them financially as well.

* The following breeders or scientists from the following countries could take part in the project:

Croatia, Romania. Ukraine, Slovakia, Turkey, Bosnia, Albania.

3rd Workshop 2010. 11. 17. Apetlon (Austria)

Results of the third workshop

The following topics were discussed at the meeting

* The question of subsidies. It is not possible to make a common table on this problem , because there are many different circumstances. There are, however, some examples which can be introduced in the final report.

* Involvement of restaurants in the marketing strategies

* To invite again other countries

Participants could not be satisfied with the answers for the questions, because many of requested people did not answer up to that moment.

4th Workshop 2011. 05.26. Debrecen (Hungary)

Results of the forth workshop

The most important item of the meeting was the preparation of the final report, and the details of it were discussed.

* Problem of the name „Podolic”. In the literature there are several different opinion on the origin of the name ”Podolic. A historical approach was decided and Ákos Maróthi-Agóts undertook to prepare it .

* Preparation of final report. Because of the absence of many outsider participants the time must be elongated and the project manager has to ask for a later deadline.

* Nowadays the internet is the most important way of communication, but the breeders and the co-workers of this Podolic group are not all familiar with it, therefore also the printed book form is necessary for the final report. To print the results needs also more time.

* Discussion on the chapters. The following chapters were discussed and accepted at the Debrecen meeting.

1. Introduction
2. The origin of the breed and of the name “Podolic”
3. The common traits of the breed group
4. The list of Podolic breeds
5. Utilization of Podolic breeds
6. Breeding programs in the group
7. Some scientific approach
8. Economic aspects
9. References

* The following papers were presented at Debrecen

I Komlósi, ass. prof.: gave an information on Debrecen University

I.M:Soysal: Podlic cattle in Turkey

Á Maróthi-Agóts: The origin of the “nickname” Podolic

A. Radácsi : How to use DNA investigations for breed identity

V. Reinprecht: The situation in Austria

I. Bodó: How to prepare the final report?

* Visit and discussion on the conservation of genetic resources of Podolic cattle group in Hortobágy National Park. A short visit of a Hungarian Grey cattle group and a review of the history of conservation policy for saving the breed. Also the role of associations in preservation programs could be discussed.

5. The short summary of the chapters

5.1. Introduction

A short description of the aim of the project.

Difficulties and programs.

The list of participants and the short description of the work already done

The list of other proceedings and books or periodicals dealing with Podolic cattle.

5.2. Origin of the name and the group Podolic

Many misunderstandings and errors are concerning the question of the name Podolic. Podolia is a region in actual Ukraine and according to many traditional opinions and views this area was the cradle of Podolic cattle breeds. On the other hand many scientists and breeders think, that it is an error and there was and there never has been such cattle breed.

A small study tries to find the traces of the name in the literature.

Another interesting question is the descent from the Aurochs, the Ur. According to the opinion of many experts the direct descendents are the long horn breeds. Now, based on the molecular genetic analysis this thesis seems not to be confirmed. Another fact, that during the history the length of horns could be changed, there are breeds with relatively young long horns and other breeds losing the length of their horns.

5.3. Common traits within the breed group

The common traits of the breeds belonging to the Podolic group can be summarized in the following table:

The traits	Exceptions and varieties
Qualitative traits	
Adult grey colour	Sexual dimorphism
Birth colour	Wide scale of reddish shades
Black eye rings	Bulls only with few exceptions
White ring around muzzle	Bulls
Circle shaped cross section of horns	Compulsory
Black tip of horns	Compulsory
Black lower part of scrotum	Compulsory
Well pigmented skin	Compulsory
Well pigmented palate	Some exceptions
Quantitative traits	
Body size	Diverse
Working ability	Compulsory
Mothering ability	Compulsory
Beefy character	Only in improved breeds
Resistance	Infected but easy process
Wantlessness	Nutrition and environment
Calving ease	Compulsory

5.4. The list of Podolic breeds

The breeds are belonging to the Podolic Group according to the professional tradition. Some distinction can be made, however, among Podolic breeds, within the group.

There are noble **aurochs-shaped ancient breeds** with long horns according to the theories of the direct origin from the wild cattle. These breeds are grouped truly to their phenotype, and conformation. There is an opinion in Western countries, that only these breeds are called Podolian.

There are **local breeds** wearing the characteristics of Podolian Cattle, but they do not have „obligatory” long horns, because the length of them could change during the history. Some of the breeds had, but lost the length of horns (e.g.Ukrainian Grey), it could change for the interest of breeders.

The common trait of Podolic cattle is the better accommodation in beef than in dairy production. That’s why there are some **improved beef breeds** within the group.

Uncertain relatives should be distinguished, which are similar in some traits, but up to now it is not a consensus among the professionals, only some of them considered such breeds in the group. These breeds are mentioned briefly as well.

Noble aurochs-shaped cattle with long horns

Razza Maremmana (Italy)

Katerini (Greece)

Hungarian Grey (Hungary)

Podolsko Govece (Serbia)

Slavosky Podolac (Croatia)

Hungarian Grey cattle in Slovakia

Hungarian Grey cattle in Austria

Local breeds

Razza Podolica (Italy)

Sykia (Greece)

Boskarin (Albania)

Sura de Stepa (Romania)

Ukrainian Grey (Ukraine)

Iskar (Bulgaria)

Istriana (Croatia)

Boskarin (Albania, Montenegro)

Boz Irk (Turkey)

Improved beef breeds

Romagnola (Italy)

Marchigiana (Italy)

Uncertain relatives

Chianina

Piemontese

Gasconne

Others Scottish Highland, Barroso, Pine wood cattle .and etc.)

5.5. Utilization

The Podolian breeds, until the first decades of 20th century, were spread from Italy, in all the countries through the Carpathian Basin and the Balkan peninsula, up to immense areas of Russian Empire and now in particular in Ukraine. Some centuries ago all the Podolic breeds were three purposes mixed breeds: Work, Beef, Milk.

With the development of mechanization in agriculture, some breeds succeeded in turning to more or less a prevailing beef purpose, not losing their rusticity, like Maremmana and many other Podolic breeds of Carpathian Basin and Balkan Peninsula.

Breeders of Italian Podolica followed further on the milk production with developing the beef direction as well, only breeders of some rare breeds cultivated the dairy production as a traditional utilization further on.

Marchigiana and Romagnola, however, developed and improved as successful specialized beef breeds.

In the first half of 20th century several breeds became endangered and the most important breeding goal the maintenance, the preservation of genetic resources became in fore ground. The other aim remained, of course, somewhere the work in small holder farms, and the beef as obligatory utilization. On the contrary the breeds, which more oriented towards the draught attitude, could not adapt themselves to the beef production, having instead a drastic decrease, until they disappeared, as the Pugliese del Veneto, the Sykia or the Transsylvanian Grey variety.

The utilization of Podolic breeds turned more and more to developing local products and to exploit the tourism as well.

The natural organic production gives an advantage to the product of these breeds in the market, because several consumers prefer the healthy meat produced in pastures.

Animal power could be used only in special cases in winter or as a spectacle in exhibitions.

5.6. Breeding programs

There are different breeding programs used by breeders of Podolic cattle. Many of them are more or less endangered local cattle and their breeders are working on the conservation of genetic resources of the breed. The most important breeding goal is to save the traditional traits of the breeds threatened by extinction (Katerini, Boz Irk).

In Italy there are well developed breeding programs for the conformation of cattle and these can be example for the other breeds as well.

The pedigree based qualification is used in Hungary, and the line breeding is a useful method in Ukraine.

There are some improved Podolic breeds, and their breeders have an improvement program for beef production (Romagnola, Marchigiana).

Thus, the breeding programs are different, but their elements can be used everywhere.

In the programs of several breeds examples can be found for morphology, for biometrical data, breeding schemes for conservation breeds and improved breeds, threats and possibilities for endangered rare breeds, programs for avoiding close inbreeding, and pedigree programs for evaluation of breeding material, and a method for taking measurements in extensive herds.

Morphological evaluation is important for both improved breeds and breeds in conservation program. The most elaborated, detailed programs for scoring of conformation (i.e. morphological evaluation) are used in Italy.

5.7. Scientific investigations

In the last few years, several molecular genetic analyses were carried out and published on Podolian cattle breeds. Summarising these papers would fill several books and lead too far, therefore our aim was only to present some interesting papers from the partners involved in our project work. These are the followings:

The first paper is a short summary on analysing the relationship among the aurochs and some Italian breeds.

The second analysis is about comparing a Podolian cattle breed with other Podolian and non-Podolian breeds based on microsatellite analyses.

The third paper introduces a country's endangered native breeds and presents their cultural value, as well.

The fourth topic is a comparison of the different types of the Ukrainian Grey cattle based on blood polymorphisms.

The last paper is about a hopefully successful tool in revealing the possible frauds of meat products of Podolian cattle breeds. It compares the MC1R gene polymorphisms of the main cattle breeds bred in Hungary and tries to distinguish these breeds from each other based on these results.

5.8. Economics

The Podolic cattle breeds are producing in extensive keeping technologies, but with high expenses, because of the longer production process. Therefore the following economic considerations seems to be important:

1. To keep the animals on modest expenses (housing and nutrition),
2. to produce special high value products and to sell them on reasonable prices,
3. to claim and accept subsidies wherever it is possible. Many of Podolic breeds are endangered and it can be the reason for subsidies,
4. to involve the possible role of tourism.

In the process of marketing the certificate and identification of local products must not be forgotten. Examples of systems of subsidies and presentation of pictures of some men dealing with Podolic cattle will close the chapter and the whole book. This last item is very important, because without this people keeping Podolic cattle and even the conservation of genetic resources and the nature protection would not be possible.

The breeding goal is joined to nature protection, the maintenance of genetic diversity and conservation of genetic resources. Although in many cases the breeding of Podolic cattle is not a profit making activity, it is necessary to make a yearly calculation of expenses and incomes.

The tourism has the role in two aspect

* The view of traditional long horned herds with dignified bulls and nice calves is an attraction for tourists. The problem is that the income from tourism reaches first of all the tourist enterprises and not the breeders.

* Tourists play an important role also in consumption of special beef and food from Podolic cattle if the net of restaurants is well organized and the publicity works well. The special “export in stomach” seems somewhere a good solution.

6. Books and periodicals used

The most important publications, books and proceedings employed in the final summary are listed here:

ANABIC official data 2000-2010

Autohtone Rase Domacih Zivotnija Srbije I Crnoj Gori Autochtonous Breeds of Domestic Animals in Serbia and Montenegro (2003 Beograd) p.250.

Srdan Stojanovic, Suzana Dordevic-Milosevic .COBISS.SR-ID 108297228

Génmegőrzés (Conservation of genes 2006 Debrecen) Mihók Sándor 364.p.

Horn conformations (1991) Ernst József, Takács István, Eszes Ferenc, Gera István ed. Bodó Imre 32.p. Budapest

Hungarian Grey cattle in search of origins László Bartosievicz Hungarian Agricultural research 1996/3 13-20.p.

Istarsko Govedo. The Istrian cattle AZZRI Pazin. Croatia 2009. 130 p. (Ed. Pavo Caput, A.Ivakovic,Graciano Prekalj, Gordan Subara Edmondo Suran)

La Podolica (risorsa e tipicità lucana). Cultura del Territorio Nicola Montemurro Taurus Special Podolica Anno XVI Supplemento a Taurus N.1/2002 Tipografia Grifo 71.p.

Races Bovines de France (2009) 153-158.p. Groupe France Agricol

Sulle Tracce delle Podoliche (2009) Roberta Guarcini Francesco Filippini 319.p. Matera

Szavasmarhafajták jellemzése és az őket fenyegető veszélyek (Characterization of cattle breeds and the danger of extinction) Srdan Stojanovic, Holló Dániel, Truzsinszki Szabolcs.Manuscript. 20.p.

The Austrian Programme for conservation of acknowledged endangered breeds

ÖNGENE 14.p. (Franz Fischerleitner, Beate Berger, Roswitha Baumung) Wels Austria

The Hungarian Grey cattle breed (2004) Budapest Imre Bodó, István Gera, Gábor Koppány. Ed.: Assocoation of Hungarian Grey Cattle Breeders 128.p.

The origins of the Hungarian Grey cattle (2000) AMC, Bugacpuszta 95.p.

Türkiye Yerli Evcil Hayvan Genetik Kaynaklari Native Farm animal Genetic Resources of Turkiye 2010 Tekirdag M.Ihsan Soysal 31.p. N.K:Ü T:Z:F: Zootekni Bl. Tekirdag

World Watch List 2000 Rome FAO UNEP Ed. Beate Scherf 3rd edition 726.p.

Debrecen, 2011-09-30

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