

D A G E N E

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BIO-ECONOMICS DEVELOPMENT AND ECO-ECONOMICS CONSERVATION OF ZOOTEHNICAL BIODIVERSITY TROUGH ECO-INOVATIVE REPRODUCTIVE BIOTECHNOLOGIES



Autori: GEORGE FLOREA TOBĂ*, ALEXANDRU T. BOGDAN*, MARCEL Th. PARASCHIVESCU*, Ipate IUDITH*, Ion PRICĂ Niculiță MANG****
***Reaserch and Study Center for Agro-Forestry Biodiversity "Acad. D.Davidescu"; ** Postdoctoral Schol for Livestock Biodiversity**

INTRODUCTION

The use of biotechnology in livestock breeding in Romania has enabled economic growth and conservation of bio- economic cross- national Patrimony livestock biodiversity. In 1994, the National Agency for Animal Breeding and Reproduction Prof. G.K. Constantinescu (ANARZ) has developed a program which provided improved cattle embryos and 400 imports; the program was approved by the Ministry of Agriculture and Rural Development and the National Association of Animal.

MATERIAL AND METHOD

Used biotechnology breeding, artificial insemination (A.I.) and embryo transfer (E.T.), is made by particular biotechnical that account for each species .

A) Biotechnology artificial insemination (AI) is performed in an approved veterinary national units that produce semen, fresh, chilled or frozen. For bovine type SEMTEST true genetic centers and for swine, sheep and goats as points of artificial insemination (A.I.) in various animal farm.

In the 5 existing units type SEMTEST are a number of steps (harvesting sperm production with artificial vagina , macroscopic and microscopic laboratory examination , semen analysis usual comprising: ejaculation volume , color, odor, sperm mobility , and introduced Semen bacteriological by A.T. Bogdan in 1984 (3) semen biochemical semen Cryobiology , followed by processing of semen and storage of semen frozen in liquid nitrogen containers at - 196 ° C , followed by delivery firm , thawing and I.A.) until a bull can be considered improver usually takes 4-5 years.

B) Biotechnology embryo transfer (T.E.)

Romanian Association for Embryo Transfer (A.R.E.T) . was established in 1994 and the ANARZ Regional Centers were founded four embryo transfer (Muntenia, Banat, Transylvania and Moldova). A.R.E.T. 1995 was affiliated to the European Asociation Embriotransfer (A.E.T.E.) and ever since then are annual reports. Globally there are International Embryo Transfer Society (I.E.T.S.) .

Biotechnology embryo transfer in farm animals is conducted in two stages, each with multiple stages.

I- Obtain embryos

This step has five phases:

- 1.Choosing female donor (D) embryos ;
2. Synchronization estrus, induction in female poliovulation potential donor artificial insemination of female poliovulate;
3. Preservations poliovulate female embryos from the uterus;
4. Identification, evaluation and classification of embryos;
5. Conservation bovine embryos .

II- Embryo transfer:

This stage consists of 4 phases:

- 1.Choosing receivers ;
- 2.Induction and synchronization of oestrus in female receivers ;
- Three .
3. Transfer embryos to recipients in various ways ;
- 4.Diagnosis of pregnancy after the transfer.

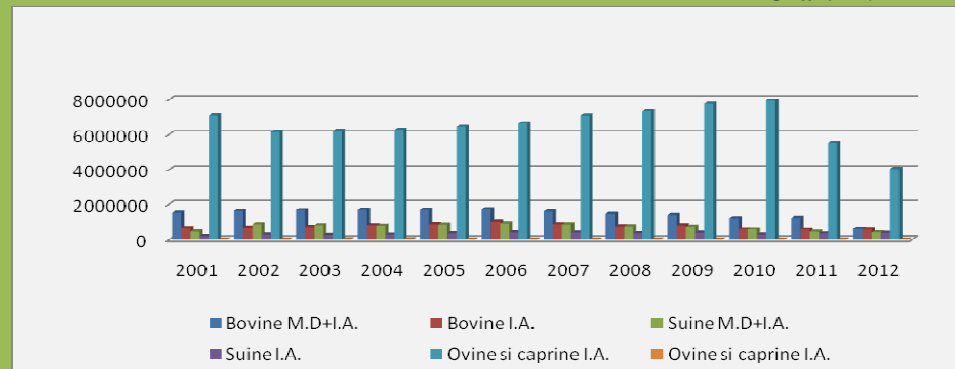
RESULTS AND DISCUSSION

A) Biotechnology artificial insemination (AI)

From the Technical Reports provided by the National Animal Breeding and Reproduction" G. K. Constantinescu", in the year 2012 worked in P.I.A.V. 2798's, they have enabled operators artificial insemination 2,736. Dynamics A.I. the period 2001-2012 is shown in chart 1.

DYNAMICS A.I. THE PERIOD 2001-2012

Chart nr.1



Average Number of women nationwide in the period 2001-2012 was:

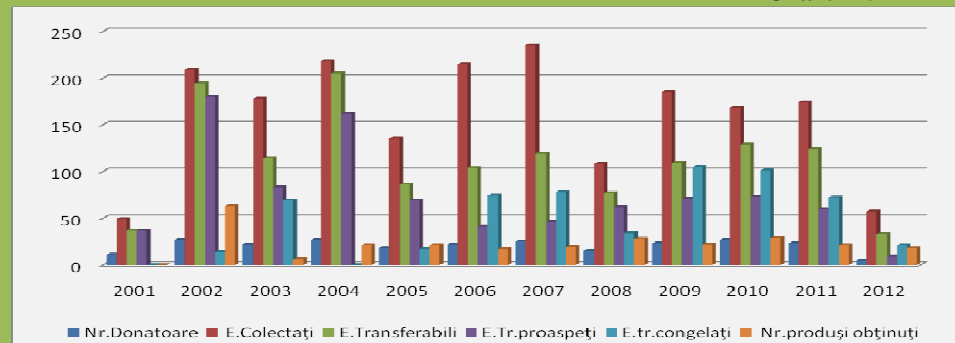
- The cattle 1,696,117, of which 753,185 were females IA (56.21%);
- Swine of 723 424, of which 310 146 sows were IA (42.87%);
- Sheep and goats of 7,229,941, of which 7,360,258 were IA (0.001%)

B) Biotechnology embryo transfer in animals

In the period 2001-2012 three teams have completed two phases approved embryo production and transfer, and all their phases, in this period succeeded poliovulate to a number of 245 cows and heifers donor of different races have was transferred to the national total, 819 embryos (469 embryos fresh and 350 frozen embryos), after which 254 resulted gestation (31.01%). Dynamics e. t. the period 2001-2012 is shown in chart 2

DYNAMICS E. T. THE PERIOD 2001-2012

Chart nr.2



In this period there were 245 cattle poliovulate donor, from which 1,931 were taken from embryonic formations (FE) 7.88 / D, which potentially transferable embryos in 1331 (68.92%).

DISCUSSION

Founding propose a subcommittee of the embryo transfer European Association Embriotransfer (A.E.T.E.), and a subcommittee SEE the Danubian Countries.

CONCLUSION

1.Biotechnology breeding artificial insemination (AI) and embryo transfer (TE.) contributes largely to the quantitative and qualitative milk and meat production through genetic selection of individuals most valuable productive and multiplying them by IA and programs such as Moet (ovulation multiple Embryo Transfer).

2. These allow access to animal genetic biotechnologies in countries with advanced animal husbandry by importing m.s.c. and embryos, with low costs and minimal risk of introducing diseases into the importing country with live animals.

3. It requires "more animal production" to ensure food sovereignty and independence of Romania in the perspective of bio-eco-XXI century economy in a changing multipolar world.



I.A

T.E.

Gathering



Examination

Blastocists

Gene Bank – Hațeg Country

REFERENCES

1. Bogdan T Alexandru, coordonatorul Vol.II ediția a II-a Biodiversity of the farm animals and eco-bioeconomics significances in the food security context” ,Coordonator Alexandru T.Bogdan,Editura Academiei Române, 2012,
2. Bogdan T Alexandru, Conservarea biodiversității patrimoniului genetic din zootehnie în relație cu biotehnologiile de reproducție.Academia Română, Simpozionul-Progrese Aplicate în Zootehnie, București, 1994.
3. Bogdan T Alexandru, Ioan Târnoaveanu,Dorina Salanțiu, ”Fertilitatea, natalitatea și prolificitatea în zootehnie”, Vol.I, Edirura DACIA, Cluj-Napoca, 1984.
- 4.David A. Stringfellow and Sarah M Seidel, Manual of the International Embryo Transfer Society 1998 third edition (IETS) Illinois-USA.
5. Ipate Iudith, A.T. Bogdan, M.Th. Paraschivescu, Mariana Sandu, Simona Ivana, N. Ipate, Amalia Străteanu, G.F. Tobă, M. Enache, ”Use rare breed for genuine food in Romanian rural turism and possibility of traceability traditional products”, Simpozionul „Prospects for the 3rd milenium agriculture”, 2010, USAMV Cluj vol 67 issue 1-2 pag. 225-230
6. Paraschivescu Th. M., “Ferma MOET cu circuit deschis Concept nou de management al reproduției vacilor de lapte”, Edi. GRANADA, București, 2010
7. Tobă G.F., A.T. Bogdan,N. Ilinca, L. Hârceagă,N. Păcală, Monografie: Biotehnologia transferului de embrioni la taurine, Ed. Bioterra, București, 2000.
8. Buletinele Informativ (2001-2012) - Agentia Națională de Ameliorare si Reproductie în Zootehnie.