

**BPGA**  
**BANCO PORTUGUÊS DE**  
**GERMOPLASMA ANIMAL**

Portuguese Animal Germplasm Bank

# Hystorical remarks

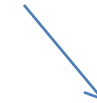
- 1936
  - First essays on artificial insemination at Santarém (former EZN)
- 60-70
  - Development of a national AI center EERA
  - AI expansion, mainly with Friesian cattle
  - Semen importation of exotic breeds
- 80-90
  - National programmes supporting local breeds (*in situ* conservation)
  - Occasional AI actions on local bovine breeds
- > Late 80's
  - Development of MOET and IVM/IVF techniques for embryo production
  - Systematic actions on local breeds
- 2004-2008
  - First systematic approach for *ex-situ* conservation - BPGA (Project AGRO 438)
  - Semen collection of almost all local breeds
- 2010
  - Official recognition and establishment of BPGA (INRB/INIA-DGV protocol)





# Management Committee Board

Ministry of Agriculture Environment and Territory  
MAMAOT



National Institute of Agrarian  
and Veterinary Research  
INIAV



Food and Veterinary  
Directorate General  
DGAV

Breeders Associations  
represented by three nominees



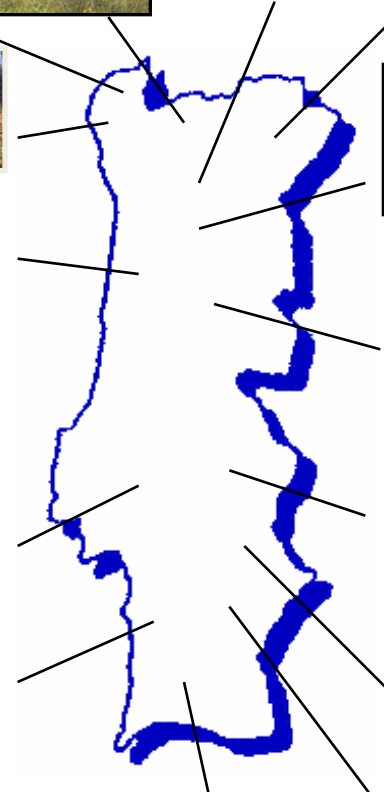
# Objectives

- **Main purpose**
  - Biodiversity conservation of animal genetic resources (AnGR)
  
- **Competences of BPGA**
  - To assure collection and maintenance of genetic material, namely semen, oocytes, embryos, somatic cells and DNA, of all domestic Portuguese breeds of livestock, in order to:
    - ◆ guarantee their conservation for the future, according to the recommendations of appropriate international organizations
    - ◆ assure their availability for selection and in situ conservation programmes of native breeds, according to the rules to be established by the Management Committee Board of BPGA
    - ◆ promote the exchange of information and, when judged appropriate, the exchange of genetic material with similar foreign gene banks.




# Portuguese local breeds

**Bovine**  
**15**



A map of Portugal is shown in blue, with 15 black lines radiating from its borders to 15 different photographs of bovine breeds. The breeds include various colors and types, such as brown, black, and spotted, with some having horns. In the bottom left corner, there is a small inset map of the Azores and Madeira archipelagos, with a green arrow pointing to a photograph of a brown bovine breed.

**Ovine**  
**15**



A map of Portugal is shown in black, with 15 black lines radiating from its borders to 15 different photographs of ovine breeds. The breeds include various types of sheep, such as white, brown, and spotted, with some having thick wool and some having horns. The photographs show sheep in various settings, including grazing in fields and in pens.

# Portuguese local breeds



Bizaro



Malhado Alcobaca



Alentejano

**Swine**

**3**



Garrano



Burro de Miranda



Sorraia



Lusitano

**Equidae**

**4**



Preta lusitânica



Pedrês portuguesa



Amarela

**Poultry**

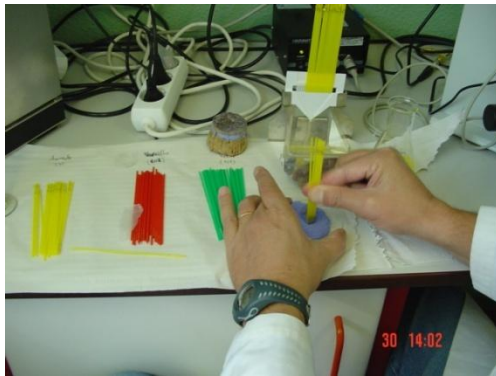
**3**



**Caprine**

**6**

# Cryopreserved semen - Ovine



Breed	Males	Doses	Female population
Bordaleira Entre Douro e Minho	6	1,262	5,396
Campaniça	1	33	6,451
Churra Algarvia	-	-	2,544
Churra Badana	-	-	4,371
<b>Churra do Campo</b>	<b>3</b>	<b>102</b>	<b>210</b>
Churra do Minho	4	301	3,767
Churra da Terra Quente	-	-	17,520
Churra Galega Bragançana	-	-	9,683
Churra Galega Mirandesa	12	2,519	6,468
Merina Branca	19	1,351	9,750
Merina da Beira Baixa	6	911	6,015
Merina Preta	16	2,133	9,870
Mondegueira	3	280	2,758
Saloia	5	1,033	3,867
Serra da Estrela	14	1,948	15,041
<b>15</b>	<b>89</b>	<b>11,873</b>	<b>103,701</b>

# Cryopreserved semen - Caprine

Breed	Males	Doses	Female population
Algarvia	-	-	3,850
Bravia	15	2,306	9,600
Charnequeira	6	1,251	3,851
Preta de Montesinho	3	554	674
Serpentina	16	691	4,463
Serrana (3 varieties)	17	2,537	17,126
<b>6</b>	<b>57</b>	<b>7,339</b>	<b>39,564</b>



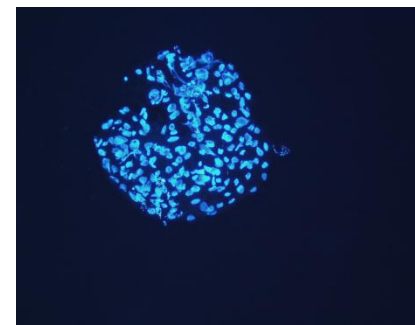
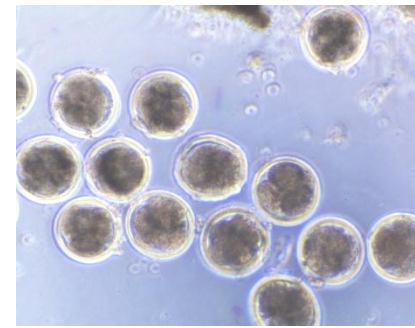


# Cryopreserved semen - Bovine

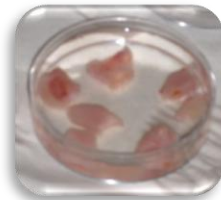


Breed	Males	Doses	Female population
Alentejana	40	43,870	16,612
Algarvia	4	2,005	7
Arouquesa	18	23,030	4,073
Barrosã	39	12,077	6,414
Brava	-	-	8,805
Cachena	12	4,045	3,660
Garvonesa	9	2,767	361
Jarmelista	3	1,039	96
Marinhua	9	925	1,347
Maronesa	13	9,973	5,102
Mertolenga	28	13,288	19,052
Minhota	20	43,330	5,090
Mirandesa	17	7,818	4,957
Preta	18	8,167	2,935
Ramo Grande	5	3,500	1,250
<b>15</b>	<b>235</b>	<b>175,834</b>	<b>79,761</b>

# Cryopreserved embryos



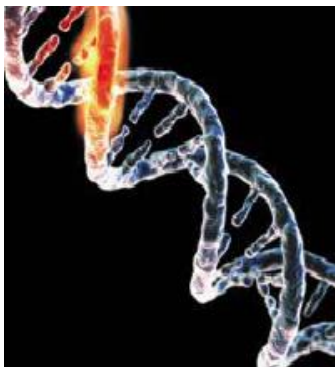
Species	Breed	Females	Embryos	Female Population
<i>Ovis aries</i>	Churra Galega Mirandesa	6	20	5,396
	Merina Preta	29	161	9,870
<b>Total</b>	<b>2</b>	<b>35</b>	<b>181</b>	
<i>Capra hircus</i>	Algarvia	7	41	3,850
	Serpentina	14	93	4,463
	Bravia	2	10	9,600
	Serrana	4	41	17,126
<b>Total</b>	<b>4</b>	<b>27</b>	<b>185</b>	
<i>Bos taurus</i>	Algarvia	1	2 ovaries*	7



\* Slices of ovarian cortex frozen by direct cover vitrification

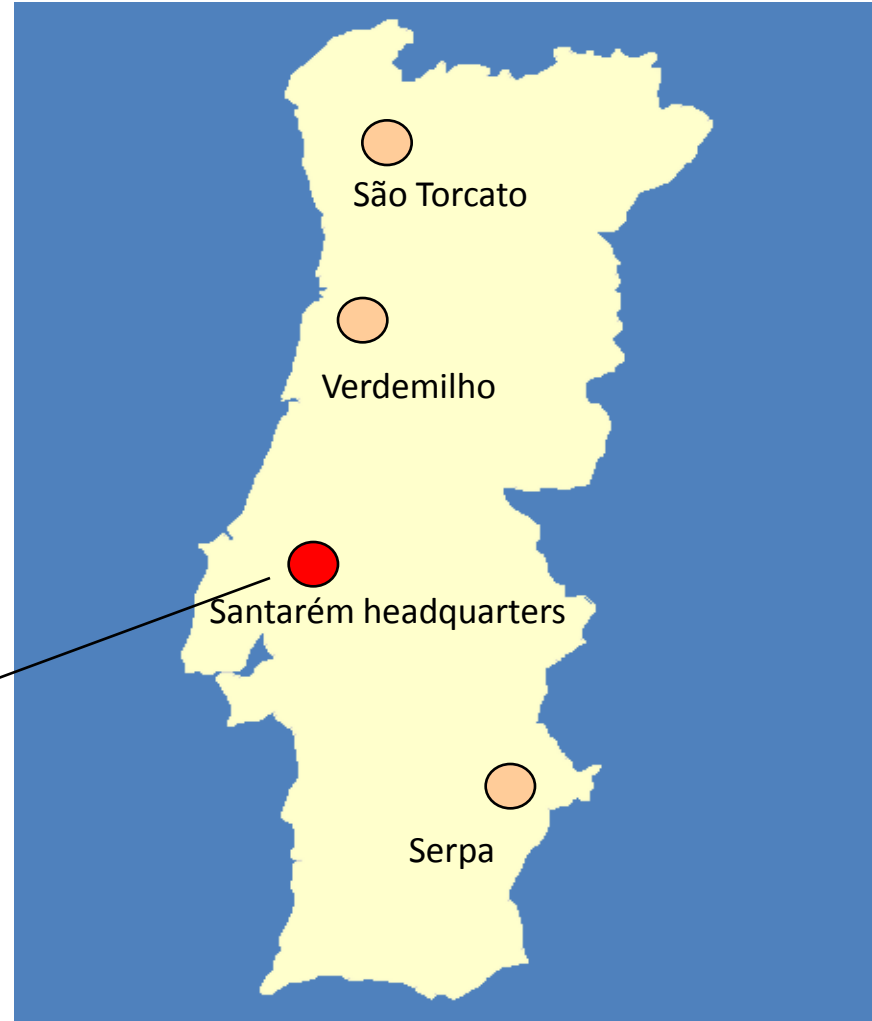
# DNA Bank

	Local breeds	
Species	Breeds	Animals
Bovine	15	1043
Ovine	15	324
Caprine	6	105
Swine	3	161
<b>TOTAL</b>	<b>38</b>	<b>1633</b>



All DNA samples are extracted and genotyped

# Duplicates (to be defined)





# Present and Future Plans

- Urgent issues
  - Funding
    - Costs for maintenance and renewal
  - Security
    - Implementation of Duplicates
  - Institutional cooperation
    - Public and private institutions
  - Regulation
  - Germplasm database





# Thank You!



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