MANAGING SMALL LIVESTOCK DIVERSITY IN EASTERN EUROPE

The Carpathian basin example

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MGÉ

Association of Hungarian Small Animal Breeders for Gene Conservation
(MGE), Hungary
The Carpathian Basin

- Natural border.
- Unique climate.
- Over 70% agricultural area.
- Several nations, different traditions.
- Special domestic animal breeds.
Unique domestic animal breeds of the Carpathian basin

- Hungarian Grey Cattle
- Mangalica swine
- Racka sheep
- Puli
- Komondor
- Transylvanian Naked-neck chicken
- Frizzled Hungarian goose
Protected poultry (1)
Hungarian chicken breeds

Hungarian

Transylvanian Naked-neck
Protected poultry (2)
Waterfowl

Frizzled Hungarian Goose

Hungarian Duck
Protected poultry (3)
Turkey and Guinea fowl

Colour varieties of turkey

Colour varieties of Guinea fowl
Subsidy system for conservation of livestock diversity in Hungary

Ministry of Agriculture and Rural Affairs
Direct and indirect subsidy, funds

Association of Hungarian Animal Breeders

National Institute for Agricultural Quality Control
Supervision of breeding associations, direct subsidy

Breeding Associations, e.g. MGE
Supervision of Gene Banks and breeding

Breeders (including National Parks and Institutions)
The role of Hungarian Agri-environment Protection Programme in livestock management

- Livestock use according to sensitiveness of land:
  - Low: intensive farming
  - Medium: extensive farming
  - High: Indigenous livestock only

- Ecological farming and eco-production.

- Sustaining rural life.

- Developing rural- or eco-tourism.

The "3 zone" land use scheme

Levels of sensitiveness:
- Low
- Medium
- High
Basic research for conservation of small livestock diversity in Hungary

- Reproduction biology
  • Spermatology
  • Embryology
  • Cryopreservation of sperm

- Cytogenetics
  • Karyotyping
  • In situ hybridization

- DNA research
  • RAPD analysis
  • Microsatellite analysis
Applied research for conservation of small livestock diversity in Hungary (1)

- Natural rearing of indigenous breeds
  - Chicken, turkey, Guinea fowl, goose, duck

- Crossing experiments for extensive farming
  - Chicken, turkey, (rabbit)

- Developing ecological farming
Applied research for conservation of small livestock diversity in Hungary (2)

Comparison of closed and free range conditions in chicken rearing (data of 2 dual purpose breeds and their crosses, Szalay et. al., 2000)

Body weight (12th week)

Feed intake and mortality (summarised data, 0-14th week)

<table>
<thead>
<tr>
<th>Breeds</th>
<th>Feed intake g/bird/day</th>
<th>Mortality %</th>
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<tbody>
<tr>
<td>Closed</td>
<td>108</td>
<td>11.6</td>
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<tr>
<td>Free range</td>
<td>95</td>
<td>0.9</td>
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</table>
Carp is the most widely produced fish species.
- Total production was over 2.5 million tonnes in 1999.
- Bred mainly in Asia and Central-Eastern Europe.

Live gene bank
- Established in 1962, by Dr. János Bakos.
- Research Institute for Fisheries, Aquaculture and Irrigation (HAKI) in Szarvas.
Live gene bank of common carp (Cyprinus carpio L.) in Hungary (2)

- Original objectives of foundation
  • Collect the "land races" from different parts of Hungary;
  • Develop hybrids/crosses for production purposes.

- After 40 years
  • The largest gene collection of common carp in the world.
  • 17 Hungarian strains.
  • 15 foreign strains.
Other small animal breeds to conserve in Hungary

Domestic rabbit breeds
- Colour varieties of the Hungarian Giant

Honeybee
- Krainian Honeybee