THE STRATEGY FOR BEEF MEAT PRODUCTION IN ROMANIA

STRATEGIA PENTRU PRODUCEREA CĂRNII DE BOVINĂ ÎN ROMÂNIA

GH. NEAȚĂ, C. ȘONEA, EMILIA CIURESCU, ELISAVETA RĂDUCĂ, V. BĂCILĂ

Genetic improvements of cattle stocks is an activity of major importance in the general strategy of animal husbandry development and it is realized through selection actions, undertaken in concordance with the official control of performance, and controlled breeding, mainly through artificial insemination. The direction of selection activities for cattle is in tight correlation with the main directions established for the breeds exploitation, which dictate both the improvements aims and the importance that each criteria has in the genetic assessment of populations. Taking into consideration, on the one hand the main directions and the aims at international level in rearing and exploiting cattle, and on the other hand, the present favorable economic environment, as well as the necessities of internal demand and of the offers and demands on the international meat market, the breeding of cattle breeds has the following main objectives:

- using as biological material breeds with high genetic potential for meat production (mixed native breeds as well as imported breeds, specialized for meat production, such as Limousine, Charolaise, Blanc Blue Belge, Aberdeen Angus, etc);
- improvement of beef’s competitiveness on a national and international level as well as adapting various breeds and hybrids to pedological – climate conditions from various regions of the country;
- improvement of the average level of production performance per head, and at the same time improvement of the genetic potential for meat production according to breed;
- drafting educational programs regarding the advantages of rearing cattle for meat and of consuming beef instead of other kinds of meat from farm animals.
Materials and Methods

Evolution Of Meat Production During 2002-2005

Basing our calculation on a stock of:

<table>
<thead>
<tr>
<th>Year</th>
<th>Slaughtered cattle</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>thousand heads</td>
<td>Kg/head</td>
<td>thousand tons</td>
</tr>
<tr>
<td>2002</td>
<td>1237</td>
<td>258</td>
<td>318,6</td>
</tr>
<tr>
<td>2003</td>
<td>1178</td>
<td>321</td>
<td>378,4</td>
</tr>
<tr>
<td>2004</td>
<td>1205</td>
<td>372</td>
<td>447,9</td>
</tr>
<tr>
<td>2005</td>
<td>1149</td>
<td>360</td>
<td>413,3</td>
</tr>
<tr>
<td>2006</td>
<td>1115</td>
<td>351</td>
<td>391</td>
</tr>
<tr>
<td>2007</td>
<td>1206</td>
<td>354</td>
<td>427</td>
</tr>
</tbody>
</table>

Source: National Institute of Statistics

Meat production decrease in 2007 compared to 2004 with about 21 thousand tons but it recorded an increase of about 36,0 thousands tons compared to 2006, due to the slightly increase of numbers and weight at slaughtering.

Meat production achieved in specialized units on development regions in 2007

<table>
<thead>
<tr>
<th>Development regions</th>
<th>Animal slaughtered (head)</th>
<th>Average weight of carcass (kg)</th>
<th>Carcass weight (tone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH-EAST</td>
<td>88295</td>
<td>196</td>
<td>17299</td>
</tr>
<tr>
<td>SOUTH-EAST</td>
<td>27125</td>
<td>203</td>
<td>5494</td>
</tr>
<tr>
<td>SOUTH</td>
<td>22478</td>
<td>201</td>
<td>4525</td>
</tr>
<tr>
<td>SOUTH-WEST</td>
<td>21876</td>
<td>200</td>
<td>4368</td>
</tr>
<tr>
<td>WEST</td>
<td>c</td>
<td>c</td>
<td>c</td>
</tr>
<tr>
<td>NORTH-WEST</td>
<td>25723</td>
<td>234</td>
<td>6067</td>
</tr>
<tr>
<td>CENTRAL REGION</td>
<td>19241</td>
<td>220</td>
<td>4236</td>
</tr>
<tr>
<td>TOTAL COUNTRY</td>
<td>211561</td>
<td>206</td>
<td>43477</td>
</tr>
</tbody>
</table>

Source: National Institute of Statistics

Unfortunately the results of breeding bovines according to breeds are similar in all counties, due to the un-profitable practices of valorizing male young bovines at low weights (with few exceptions in the counties from the Central and North-West regions). In the area of Romanian Spotted cow - Simmental breed, a breed specialized for meat and milk, we can not emphasize superior results compared to the rest of the country, where mainly the black and brown spotted breed is reared.
Valorizing the Meat Production

According to market’s demands, valorizing is assured through the specific systems flow for each product or group of products. Thus, in our country, animal valorization, meat and processed products may be sent to the following specific markets: the free market of agricultural producers specialized in rearing animals, the market of integrated enterprises, which receive living animals, process and valorize them, the market of producers in breeding and selection purposes. The structure of the offer for bovine meat is assured by the following categories: adult animals 30 - 35 % (old age, low quality); semi-adult animals 50 – 55 % (they come from extensive systems and have superior qualities) young animals 10 - 15 % (18 months old, high quality).

Meat production valorizing in 2007

<table>
<thead>
<tr>
<th>Specification</th>
<th>Thou.heads</th>
<th>Kg/head</th>
<th>Thou.tons</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production obtained</td>
<td>1206</td>
<td>354</td>
<td>427</td>
<td>100</td>
</tr>
<tr>
<td>Delivered at specialized units</td>
<td>211</td>
<td>417</td>
<td>88</td>
<td>21</td>
</tr>
<tr>
<td>Gross human apparent consumption</td>
<td>10,970</td>
<td>236,6</td>
<td></td>
<td>55</td>
</tr>
</tbody>
</table>

Imports of cattle meat and live animals in 2005-2007

<table>
<thead>
<tr>
<th>Specification</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total import (for EU: imports from third countries)</td>
<td>33,8</td>
<td>53,9</td>
<td>11,70</td>
</tr>
<tr>
<td>Imports from EU-12 (for EU: intra –EU exchanges)</td>
<td>6,40</td>
<td>3,20</td>
<td>11,10</td>
</tr>
<tr>
<td>Total imports of live animals</td>
<td>1,60</td>
<td>1,80</td>
<td>1,50</td>
</tr>
<tr>
<td>Imports from EU (intra EU) of live animals</td>
<td>1,40</td>
<td>1,80</td>
<td>1,50</td>
</tr>
</tbody>
</table>

Source: EUROSTAT, Agricultural statistic

Exports of cattle meat and live animals in 2005-2007

<table>
<thead>
<tr>
<th>Specification</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total exports (for EU: Exports to third countries)</td>
<td>0,90</td>
<td>1,30</td>
<td>6,10</td>
</tr>
<tr>
<td>Exports to EU-12 (individual countries only)</td>
<td>0,30</td>
<td>0,50</td>
<td>5,50</td>
</tr>
<tr>
<td>Total exports of live animals (for EU: Exports to third countries)</td>
<td>20,00</td>
<td>25,60</td>
<td>23,10</td>
</tr>
</tbody>
</table>
Foreseen Situation of Meat Production

Achieving the main objectives in improving the cattle breeds is foreseen to take place on the general background of a unitary and coordinated system, which will unfold on account of amelioration programs. In order to improve and develop meat production from a quantitative point of view, we have two alternatives within the national amelioration program:

1. Rearing cattle stocks breeds nucleus specialized for meat production
2. Industrial crossings among local mixed breeds, milk breeds and meat breeds in order to obtain commercial hybrids for slaughtering. These types of crossings may be simple or multiple according to the aims proposed regarding slaughtering benefits but mainly meat quality and the breeding benefit (cost per kilogram of live weight)

<table>
<thead>
<tr>
<th>CROSSING PROGRAM FOR THE ACHIEVEMENT OF CATTLE MEAT HYBRIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanc Bleu Belge x Bâlțată cu Negru Românească</td>
</tr>
<tr>
<td>Limousine x Bâlțată Românească</td>
</tr>
<tr>
<td>Charolaise x Brună (Romanian Brown)</td>
</tr>
</tbody>
</table>

productivity (selective reform) may be used in the first generation industrial crossings with Romania Spotted cow – Simmental bulls tested for meat production or from breeds specialized for meat production; Charolaise, Limousine and Blanc Blue Belge, the resulting offspring being reared, fattened and slaughtered exclusively for meat production.

4. Cattle from Romania Spotted cow breed annually reformed on the criterion of milk production (selective reform) with body conformation traits favorable to meat production and a part of the heifers resulted by first generation industrial crossings may be maintained in exploitation and artificially inseminated with frozen seminal material from Bâlțată Românească – Simmental bulls tested for meat production or from meat specialized breeds such as Limousine; they are used as nursing cows which

Source: EUROSAT, Agricultural statistic.
Exports of cattle meat are very limited. The European markets practically do not grade the small carcasses of about 150-250 kg, quite typical in Romania, as animals are often slaughtered too early.
are not milked, their offspring regardless of sex, being naturally fed and meant exclusively for slaughtering.

5. Cattle from Brown breed, annually reformed are crossed with Charolaise bulls: the males are all slaughtered; the heifers (F2) are inseminated with seminal material from Charolaise breed; the resulting males are slaughtered in totality; the heifers (F3) are brought back to one of the parental breeds applying a national crossing system with very good results from the point of view of breeding benefit and meat quality.

6. The same steps are applied for the Black Spotted Romanian breed and the Blanc Bleu Belge

**Research Results**

**Meat production estimate:**

**I. Bulls distribution on quota for the achievement of** 3,2 million liters of milk=800 thousands per head.

Original stock = 1700 000 heads.
1700 000 - 800 000 = 900 000 heads.

Necessary for replacement per year = 25 %
900 000 heads X 25% reform = 225 000 heifers for reproductive stock replacement;

900 000 heads X 80%N X 85% S = 612 000 calves;
612 000 heads – 225 000 replacement of reformed reproductive stock = 387 000 calves for fattening;

387 000 heads X 450 kg./head = 174 150 t. live;
174 150 t. X 60%r = 104 490 t. calves carcass;
225 000 heads reform x 550 kg/head = 123 750 t. adult bovines ;
123 750 t. X 50% r = 61 875 t. adult bovine carcass

**II. Stock meant for the milk quota = 800 000 heads**

Average period of exploitation = 4 lactations
Natality = 80% ;
Loss till getting the reproductive period = 15%;
Being the average period of exploitation = 4 years
25% reform x 800 000 heads = 200 000 heads reform / year

The reproductive stock is given by:

\[ NP = \frac{2 \times R\%}{N\% \times S\%} \]

NP = 2 x 200 000 heads / 80% x 15% = 588 235 heads pure breed cattle.

Available for IA with meat breeds approximately 200 000 heads / year

200 000 heads X 80% N x 85%S = 136 000 heads Calves for slaughtering
136 000 heads X 450 kg./head = 61 200 t. live
61 200 t. X 60% r = 36 720 t. calves carcass
200 000 heads reform x 550 kg./head = 110 000 t. adult live bovines
110 000 t. X 50% r = 55 000 t. adult bovine carcass

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III. Artificial insemination for cattle in order to replace the breeding reproductive stock meant for quota is undertaken at the first insemination with seminal material from meat breeds (Aberdeen Angus).

200,000 heads $\times$ 80%N $\times$ 85%S = 136,000 heads
136,000 heads $\times$ 450 kg / head = 61,200 t. live
61,200 t. $\times$ 60% r = 36,720 t. carcass.

**Young bovines**: 104,490 t. + 36,720 t. + 36,720 t. = **177,930 t. meat young bovines**

Adult bovines: 61,875 t. + 55,000 t. = **116,875 t. meat adult bovines.**

**Total carcass meat** = 117,930 t. + 116,875 t. = **294,805 t. ≈ 300,000 t.**

Symbols: r% - slaughtering benefit; N% - natality; S% - survival rate (losses till entering the reproductive period); NP – breeding stock; R% - annual reform.

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The interrelation between producer, processor, valorizing agent and consumer.

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The interrelation between producer, processor, valorizing agent and consumer emphasizes a correlation between three levels of quality, each corresponding to the respective stages: meat production, processing and valorizing.

The agent who processes living animals for meat is mainly interested in the corporal mass that is to be valorised, in the conformation and in slaughtering benefit.

The valoriser of meat through carving has in view the overall value of the carcass.

The consumer is interested in the distribution of ranges ensuring a good taste, characteristics enhanced by tenderness and low fat content. According to these principles, the producer must have in view the continuous optimizing of technologies for bovine exploitation for meat production, ensuring the production of ranges required by the market.

Conclusions

1. **Weak links of the meat branch**
   - the important decrease of stocks and meat production, the defective functioning of the reproductive system and of sanitarian and veterinarian actions;
   - the lack of a strong meat-merchandise producing sector;
   - low meat consumption on inhabitant head and a high level of self-sufficiency in rural areas;
   - low productivity in the sector of feed production;
   - the lack of an organised system of supplying for the slaughtering houses;
   - difficulties regarding storage and the functioning of the refrigerating system;
   - deficiencies regarding quality (feed, optimal slaughtering weight, storage, packing);
   - high cost of meat processing;
   - low performance regarding the market’s offer and demand;

2. **Strong points of the meat branch**
   - large areas of pastures and hay-fields;
   - capacity of rearing and exploiting bovines for fattening;
   - high productive capacity for grains used to feed young bovines and adult bovines during the final period;
   - high enough reproductive stock in order to structurate the bovine production in the two directions mentioned above: milk and meat without affecting Romania’s milk quota;
   - availability of human potential in rural areas, especially in hilly areas;

3. Direct comunitary support for Romania’s meat sector is given starting from the present E.U. policy for agricultural support. The funding for stabilising
the meat market in Romania aims at the following advantages: disciplining the market, forming producer groups; increasing profitability for animal producers, modernising the infrastructure in rural areas; providing internal market with quality goods; facilitating meat and processed meat products export.

References

5. Programul de ameliorare a efectivelor de taurine din România – OM 309/2003