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SUMMARY
of the doctoral thesis

“RESEARCHES REGARDING THE MORPHO-PRODUCTIVE CHARACTERISTICS AND EXPLOITATION PERSPECTIVES OF THE TAU RINES FROM THE ALBA COUNTY”

Developed by the engineer Avram Alin-Florin, under the scientific leadership of Prof. PhD. engineer Mureșan Gheorghe, from the University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Faculty of Animal Science and Biotechnologies.

The thesis “Researches regarding the morpho-productive characteristics and exploitation perspectives of the taurines from the Alba County” contains two parts and is structured in nine chapters, contains 94 tables and 81 figures (photos and graphics).

The first part is a bibliographical study in which we wanted to emphasize the importance of raising and exploiting taurines for the milk production, as well as the importance of milk for the human consumption. In this part we analyzed as well the current situation and a part of the existing problems in the raising of taurines on national and worldwide level.

We dedicated the second part to our own researches, performed in view of developing and finalizing the present thesis, researches which were developed in ten farms of milk cows, of different dimensions, representatives for the Alba County.
The bibliographical study presented in the first part is structured in three chapters, as follows:

In the chapter I we presented the importance of raising and exploiting taurines for the milk production, as well as the importance of cow milk for the human consumption.

The importance of taurines resides from the main products offered by these for the human consumption: the milk and meat, products that constitute a rich source of nutrients, appreciated in the human alimentation. The milk occupies the second place after meat as economical and alimentary importance, representing in the same time one of the cheapest sources of animal protein with a very high biological value. The importance of milk for the human alimentation resides in the affirmation that the milk is the ideal alimentary product for children, excellent for females in the maternity period and sick people, very good for adolescents, elders and workers who operate in a toxic environment and good for any adult (Vignon B., and col., 1978).

The nutrients from milk are considered to be the most valuable: one liter of milk contains approximately 35 g lipids, 34 g proteins, enzymes, mineral salts, vitamins, in nature there is no other aliment which resembles the milk from this point of view.

Chapter II refers to the current situation of raising and exploiting taurines as well as their growth perspectives. The demographic burst of the population from the last decades as well as the growth of the level of living from the developed countries, determined the growth of the needful food, and as a consequence of these aspects we can observe the growth of the number of cattle at worldwide level, as well as the individual productions.

At the level of the year 2010 there is a number of 1,6 billion cattle with 143,87 millions more (about 9,73%) than in the year 2000, growth owed to the growing needs of products which come from the animals. It was observed that the biggest numbers are concentrated on the continents: Asia were are concentrated approximately 40% of the worldwide numbers, South America -21.65% and Africa with 17.69%, continents whose countries the majority, are under developed or in development, the growth of the total productions is concentrated more on the growth of the numbers comparatively with the growth of the individual production.

Besides the multiple ways of appreciation regarding the situation of taurines raising, the number of cattle reported to 100 hectares agrarian field, as well as the number of cattle at 1000
people emphasizes the degree of intensification of the animal science and the possibilities to satisfy the internal needs with products and sub-products from the same species.

From the analysis of these indicators we noticed that at a worldwide level the number of cattle at 1000 people decreases with 23.18% from 330 head in the year 1970 at 237 head at the level of the year 2007. The biggest decreases are registered on the European continent; the number of cattle at 1000 people is in the year 2007 of 217 head (65.69% from the year 1970) and on the North American continent were this index represents values of 224 head (42.83% from his value in the year 1970). The descending character of the number of cattle at 1000 people is owed to the rhythm of the human population growth, which is superior to the rhythm of growth of the number of cattle, as well as the growth of the individual production performances of the cattle, especially in North America and Europe. In exchange the number of cattle at 100 hectares agrarian field is growing in the last years, less on European and North American continents, where the individual production performances of the cattle are higher.

The analysis of the milk productions on a worldwide level is presenting itself as such: the total milk production which comes from cows grows progressively in the last ten years from 496,905 thousand tons in the year 2001, at 599,438 thousand tons at the level of the year 2010, with about 20.63%; the average individual annual production of milk which comes from cows represents an ascending evolution at worldwide level from 1907 kg/head in the year 1970 at 2349 kg/head in the year 2009, therefore a growth of 23.17% with an annual average of +0.59%. This evolution is the consequence of perfecting the techniques continually improved by the amelioration, of the exploitation technologies and their intensification.

Regarding the situation of taurines raising from our country we can underline the followings: 1. The number of cattle decrease in the last years from 2.8 million head in the year 2001 at 2.13 million head in the year 2011 (with about 23.9%). In the year 2011 the matrix number is of 1,312 million head and represents 61, 59% from the total number. In the year 2011 the matrix number is of 1,746 million head and represents 62, 35% from the total number of cattle; 2. The average size of a farm of cattle is of just 2, 73 head. Under these conditions a selection work and the application of modern technologies are not easily accessible. 3. Romania at the level of the year 2010 had a number of 3, 86 million exploitations, representing almost a third of the total of 12, 05 million agrarian exploitations which exist in
the European Community. The average size of an exploitation is of just 3, 4 hectares among the smallest of Europe, below us being only Cyprus with 3,1 hectares and Malta with 0,4 hectares. The average production of cow milk in the year 2010 is liters/head at 3529 l/head.

Chapter III is dedicated to the description of the milk cows breeds Bălțată româneasca of Simental type (BR) and Bălțată cu negru românească – Holstein Friză (BNR).

The second part of the doctoral thesis is structured in six chapters and begins with chapter IV in which are presented the work hypothesis and the purpose of the research, the geo-climatic conditions from the Alba County and the exploitation conditions from the studied farms.

The researches were conducted in the period of 2004 – 2010 and begin from the premise that it is absolutely necessary to know the phonotypical characteristics from the desired production of the taurines population, of the raising and exploitations technologies and of the socio-economical conditions where the animals are exploited for obtaining maximum production performances. In order to have an overview of the conducted researches which are about to be debated through the thesis, we will announce the objectives of the research:

- Knowing the natural and artificial environment specific to the Alba County;
- The study of the micro-climate were the researches are conducted;
- The analysis of the performances of the milk production obtained in the studied farms;
- The study of the phonotypical parameters regarding the reproduction activity;
- Researches regarding the quality parameters of the milk;
- Researches regarding the morphological characteristics of the number of cows from the studied farms, which belong to the Bălțată românească and Bălțată cu negru Românească breeds;
- The exploitation perspectives of the taurines from the Alba County.

Broadly, the Alba County is characterized by the fact that it provides favorable conditions for the cattle exploitation, having a temperate continental climate, with a rich network of waters and a share of the agrarian surface from the total surface of the County of 52,8%, meaning 329 700 hectares.
The farms where the researches were conducted are presented syntactically in the table 1. We notice that the studies were conducted on a matrix number witch contains 632 head of the Bălțată românească breed and 967 head of the Bălțată cu negru românească breed.

Table 1

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Total number (head)</th>
<th>Matrix number (head)</th>
<th>Proportion breed</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.C. STAZOO SRL</td>
<td>250</td>
<td>125 (105+20)</td>
<td>100% BNR</td>
</tr>
<tr>
<td>S.C. VITIS AUGUSTA SRL</td>
<td>180</td>
<td>100 (85+15)</td>
<td>100% BNR</td>
</tr>
<tr>
<td>S.C. BIOTERA SRL</td>
<td>674</td>
<td>457 (352+105)</td>
<td>100% BNR</td>
</tr>
<tr>
<td>S.C. GOLDENPROD SRL</td>
<td>480</td>
<td>300 (150+150)</td>
<td>30% BR; 70% BNR</td>
</tr>
<tr>
<td>S.C. ZOOAGRO SRL</td>
<td>90</td>
<td>55 (40+15)</td>
<td>100% BNR</td>
</tr>
<tr>
<td>PFA MUNTEANU CORNEL</td>
<td>100</td>
<td>65 (40+25)</td>
<td>100% BR</td>
</tr>
<tr>
<td>PFA MOLDOVAN IOAN</td>
<td>55</td>
<td>28 (20+8)</td>
<td>40% BR; 60% BNR</td>
</tr>
<tr>
<td>PFA SCHEAU CRISTINA</td>
<td>140</td>
<td>84 (62+22)</td>
<td>100% BR</td>
</tr>
<tr>
<td>S.C. AGROLACT SRL</td>
<td>486</td>
<td>285 (242+43)</td>
<td>100% BR</td>
</tr>
<tr>
<td>S.C. AGROSERV SRL</td>
<td>170</td>
<td>100 (72+28)</td>
<td>100% BR</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2625</td>
<td>1599 (1168+431)</td>
<td></td>
</tr>
</tbody>
</table>

Legend: VL- milk cows; J- heifers; BR- Romanian Spotted Cattle; BNR- Black Spotted Romanian Cattle.

Chapter V is dedicated to the analysis of the productive and reproductive performances attained in nine of these farms (at the farm S.C. Agroserv SRL – were not identified relevant data in the database UARZ Alba, because it had recently entered in the official surveillance), and the results are synthetically presented in the tables 2 and 3.

Regarding the production performances was conducted the statistical analysis of a total number of 4 079 successive lactations (from a matrix number of 1499 head), data processed with the help of the computer with the Excel program.

The results obtained (table 2) show that the averages per farm for the milk production are between 4491 kg milk/cow/lactation in the farm S.C. Vitis Augusta SRL, and 8579 kg milk/cow/lactation in the farm S.C. Biotera SRL, in the case of the total lactation, with an average duration in days of this between 323 days (S.C. Zooagro SRL) and 371 days (S.C. Agrolact SRL). We want to add that the minimum and maximum individual values regarding the quantity of milk per total lactation are of 1314 kg milk and 20119 kg milk, values accomplished in the same farm named S.C. Biotera SRL. Regarding the normal lactation we have average productions per farm from 4165 kg milk/cow (S.C. Vitis Augusta SRL) at 7390
kg milk/cow in the farm SC Biotera SRL, the majority of the registered average values at the studied farms are between 5000-6000 kg milk. The average valued of the fat percentage from the milk varies from 3, 83% la 4,02% in the case of the total lactation and 3,82% and 4,01% in normal lactation. The protein percentage has average values between 3, 21% and 3,335% (normal lactation).

Table 2

The average values of the main indexes of the milk production at the studied farms:

<table>
<thead>
<tr>
<th>Farm</th>
<th>Average</th>
<th>Total Lactation</th>
<th>Normal Lactation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Duration of the lactation (days)</td>
<td>Milk (kg)</td>
</tr>
<tr>
<td>S.c. Stazoo Srl</td>
<td>X</td>
<td>342</td>
<td>6393</td>
</tr>
<tr>
<td>S.c. Vitis Augusta Srl</td>
<td>X</td>
<td>328</td>
<td>4491</td>
</tr>
<tr>
<td>S.c. Biotera Srl</td>
<td>X</td>
<td>364</td>
<td>8597</td>
</tr>
<tr>
<td>S.c. Goldenprod Srl</td>
<td>X</td>
<td>353</td>
<td>5708</td>
</tr>
<tr>
<td>Sc. Zooagro Srl</td>
<td>X</td>
<td>332</td>
<td>4971</td>
</tr>
<tr>
<td>Pfa Munteaun Cornel</td>
<td>X</td>
<td>323</td>
<td>5496</td>
</tr>
<tr>
<td>Pfa Moldovan Ioan</td>
<td>X</td>
<td>344</td>
<td>5783</td>
</tr>
<tr>
<td>Pfa Scheau Cristina</td>
<td>X</td>
<td>366</td>
<td>6908</td>
</tr>
<tr>
<td>Sc Agrolact Srl</td>
<td>X</td>
<td>371</td>
<td>6026</td>
</tr>
</tbody>
</table>

For the analysis of the reproductive performances from the data collected by UARZ Alba were calculated and studied one of the main reproductive indexes. As such the main reproductive indexes followed by us are:

- VPF – the age of the first calving – for 2112 seasons of concluded reproduction;
- CI – the calving interval - for 4510 seasons of concluded reproduction;
- SP - the service-period - for 3206 seasons of concluded reproduction;
- RM – the mammary rest- for 2843 seasons of concluded reproduction.

In the table 3 are presented the results obtained regarding the age of the first calving, at the interval between calving, the service-period and of the mammary rest. We notice that we have average values for the age of the first calving from 894,59 ± 5,84 days as in the case of the cows exploited at the farm Sc Agrolact Srl, at average values of 1014,39 ± 22,30 days (Pfa
Scheau Cristina). For the interval between calving the average values are between 390.25 ± 3.45 days (Sc Stazoo Srl) and 430.46 ± 14.21 days. We can notice that the best performances regarding the service-period are obtained at the farms Sc Agrolact Srl, Sc Biotera Srl and Sc Stazoo Srl and namely 99.02 days, 96.75 days and respectively 103.31 days.

Table 3

The average values of some reproductive indexes at the taurines from the studied farms:

<table>
<thead>
<tr>
<th>FARM</th>
<th>V.P.F</th>
<th>C.I</th>
<th>R.M</th>
<th>S.P</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.C. BIOTERA SRL</td>
<td>900.2 ± 4.47</td>
<td>396.5 ± 1.65</td>
<td>68.66 ± 0.76</td>
<td>96.75 ± 1.06</td>
</tr>
<tr>
<td>S.C. GOLDENPROD SRL</td>
<td>942.2 ± 8.14</td>
<td>413.55 ± 4.78</td>
<td>62.07 ± 1.68</td>
<td>107.79 ± 3.23</td>
</tr>
<tr>
<td>PFA MOLDOVAN IOAN</td>
<td>972.05 ± 26.59</td>
<td>408.94 ± 8.53</td>
<td>65.49 ± 3.43</td>
<td>114.2 ± 7.18</td>
</tr>
<tr>
<td>PFA MUNTEANU CORNEL</td>
<td>994.76 ± 24.05</td>
<td>406.5 ± 6.95</td>
<td>54.84 ± 2.25</td>
<td>108.31 ± 5.89</td>
</tr>
<tr>
<td>PFA SCHEAU CRISTINA</td>
<td>1014.39 ± 22.30</td>
<td>428.99 ± 7.14</td>
<td>55.81 ± 1.80</td>
<td>119.93 ± 5.15</td>
</tr>
<tr>
<td>S.C. VITIS AUGUSTA SRL</td>
<td>947.17 ± 14.00</td>
<td>415.37 ± 4.37</td>
<td>68.63 ± 1.44</td>
<td>107.62 ± 2.75</td>
</tr>
<tr>
<td>S.C. STAZOO SRL</td>
<td>903.8 ± 8.32</td>
<td>390.25 ± 3.45</td>
<td>64.91 ± 1.51</td>
<td>103.31 ± 2.31</td>
</tr>
<tr>
<td>S.C. ZOOAGRO SRL</td>
<td>970.84 ± 17.33</td>
<td>430.46 ± 14.21</td>
<td>50.67 ± 2.32</td>
<td>118.43 ± 10.28</td>
</tr>
<tr>
<td>S.C. AGROLACT SRL</td>
<td>894.59 ± 5.84</td>
<td>396.00 ± 1.86</td>
<td>74.72 ± 1.03</td>
<td>99.02 ± 1.12</td>
</tr>
</tbody>
</table>

Legend: V.P.F – the age of the first calving; C.I – the calving interval; R.M – the mammary rest; S.P – the service-period

We dedicated chapter VI to the study regarding the quality parameters of the milk. Thus milk was collected monthly in sterile tubes (about. 25 ml), from September 2007 until August 2008 and the samples were examined at the Foundation for the control of the quality of milk and also at the processing unities. Thus were collected 96 samples from the milk tank from the following eight farms: SC.Stazoo SRL, P.F.A Scheau Cristina, S.C Zooagro SRL, P.F.A Munteanu Cornel, S.C Goldenprod Impex SRL, S.C. Biotera SRL, S.C Vitisaugusta SRL, P.F.A Moldovan Ioan.

The milk quality is influenced by a series of factors that depend from the potential of the animal, the maintenance conditions (shelter, micro-climate, feed, watering), and the hygiene provided during the milking and afterwards. The number of somatic cells (NCS) from the milk, indicates to the farmer the health condition of the cows’ udder and the total number of germs (NTG) provides us with indications regarding the way in which the cows are milked and mainly how they are maintained from a hygienic point of view the milking instruments, as well as at which temperature the milk is kept after it was milked. The results obtained are centralized in the table 4 following their analysis we can affirm that the milk
which comes from the eight farms match the EU standards, which reflects the application of an adequate technology of feeding, maintaining and milking.

In this chapter we can add that the minimum limits regarding these two indicators (NTG and NCS) were of 10X1000 NTG/ml milk in the farms S.C. Goldenprod Impex SRL, S.C. Biotera SRL, S.C. Vitisaugusta SRL, P.F.A Moldovan Ioan and of 19X1000 NCS/ml milk in the farm S.C. Goldenprod Impex SRL.

Table 4

The average values of the total number of germs and somatic cells from the milk which comes from the studied farms:

<table>
<thead>
<tr>
<th>Farm</th>
<th>Samples milk</th>
<th>NTG/ml x1000</th>
<th>NCS/ml x1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.C. STAZOO SRL</td>
<td>12</td>
<td>36,58 ± 3,11</td>
<td>237,08 ± 35,92</td>
</tr>
<tr>
<td>P.F.A SCHEAU CRISTINA</td>
<td>12</td>
<td>36,58 ± 3,11</td>
<td>245,42 ± 33,61</td>
</tr>
<tr>
<td>S.C. ZOOAGRO SRL</td>
<td>12</td>
<td>93,33 ± 12,01</td>
<td>277,33 ± 30,72</td>
</tr>
<tr>
<td>P.F.A MUNTEANU CORNEL</td>
<td>12</td>
<td>77,75 ± 2,04</td>
<td>256,42 ± 31,24</td>
</tr>
<tr>
<td>S.C. GOLDENPROD SRL</td>
<td>12</td>
<td>21,67 ± 6,56</td>
<td>162,00 ± 41,35</td>
</tr>
<tr>
<td>S.C. BIOTERA SRL</td>
<td>12</td>
<td>15,83 ± 2,69</td>
<td>139,92 ± 26,61</td>
</tr>
<tr>
<td>S.C. VITISAUGUSTA SRL</td>
<td>12</td>
<td>17,25 ± 3,09</td>
<td>118,00 ± 10,62</td>
</tr>
<tr>
<td>P.F.A MOLDOVAN IOAN</td>
<td>12</td>
<td>43,50 ± 8,39</td>
<td>197,33 ± 28,37</td>
</tr>
</tbody>
</table>

Legend: NTG – total number of germs; NCS – number of somatic cells.

Chapter VII was dedicated to the researches regarding the morphological characteristics at the breeds Romanian Spotted Cattle and Black Spotted Romanian Cattle. For the morphological characteristics were conducted two studies, one having as data basis the assessment charts from six farms, and the other study begins from the interpretation of the biometrical measurements made.

The data for the first study were collected from the assessment charts from UARZ – Alba, from the cows examined between 2004 -2009. Were gathered 194 assessment charts from cows born from bulls which were tested and candidates cows mother of bulls, raised in six of the studied farms: Sc Goldenprod Impex Srl, Sc Biotera Srl, Sc Vitisaugusta Srl, Sc Agrolact Srl, Sc Stazoo Srl and Pfa Munteanu Cornel. The results obtained from the analysis of the assessment charts show that for the breed Balțată cu negru românească, the size grows
from the average of 134.15 ± 0.91 cm in the first lactation at 145.64 ± 0.56 in the third lactation. The same thing happens with the height at the croup which from 137.12 ± 0.81 cm in the first lactation arrives at 146.86 ± 0.56 in the third lactation.

At the breed Romanian Spotted Cattle we notice the same aspect, regarding the size and the height at the croup, that the values of these grow from 132.54 cm in the first lactation at 136.00 cm in the third lactation in the case of the size and respectively from 135.08 cm at 139.58 cm for the height at the croup. In case of the body weight, we notice an increase from one lactation to another, that from 563 kg in the first lactation, at 647 Kg in the third lactation for the breed Romanian Spotted Cattle and from 559 kg at 678 kg for the breed Black Spotted Romanian Cattle. In accordance with the values of the body weight, the values of the chest perimeter represent averages of 192.13 ± 1.63 cm in the first lactation, 202.47 ± 3.6 cm in the second lactation and 204.71 ± 1.87 cm in the third lactation for the breed Black Spotted Romanian Cattle. For the breed Romanian Spotted Cattle the values of the chest perimeter are of 190.3 ± 1.14 cm in the first lactation and arrive in the third lactation at 200 ± 3.24 cm.

Concerning the scores obtained by the examined cows, we can assert that the animals are adequate from the point of view of the body building with their breed, obtaining total scores with averages of 80.35 ± 0.31 for the breed Black Spotted Romanian Cattle in case of the farm S.C. Goldenprod Impex SRL for the first lactation and total scores with the average of 84.92 points in case of the farm S.C. Biotera SRL.

Concerning the points given for the configuration of the udder the best scores were obtained by the cows from the farm S.C. Biotera SRL for the breed Black Spotted Romanian Cattle with values of: 34.20; 34.38 and 34.49 points udder and for the breed Romanian Spotted Cattle the best scores were obtained in the farm S.C. Agrolact SRL where were registered average values of 25.38 points udder.

The second study regarding the morphological characteristics was conducted in three farms: S.C. Agrolact SRL, S.C. Agroserv SRL and S.C. Stazoo SRL where were conducted eight biometrical measurements on a number of 150 milk cows in different lactations, 90 head from the breed Romanian Spotted Cattle and 60 head from the breed Black Spotted Romanian Cattle. The conducted measurements are: H.G – height at the withers, H.C – height at the

In the farms S.C. Agrolact SRL and S.C. Agroserv SRL are exploited milk cows from the breed Romanian Spotted Cattle and in the farm SC Stazoo SRL are exploited cows from the breed Black Spotted Romanian Cattle. In the table 6 are presented the average values per farms obtained following the statistical processing of the conducted measurements.

Table 5
The average values of the main body sizes, measured on the number of milk cows, exploited in the studied farms:

<table>
<thead>
<tr>
<th>Farm</th>
<th>The sample’s statistics</th>
<th>H.G</th>
<th>H.C</th>
<th>A.T</th>
<th>L.OB.T</th>
<th>LAR.P</th>
<th>LAR.C</th>
<th>P.T</th>
<th>G(KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sc Agrolact Srl</td>
<td>X</td>
<td>137,45</td>
<td>140,08</td>
<td>70,90</td>
<td>165,85</td>
<td>53,37</td>
<td>55,92</td>
<td>201,54</td>
<td>659,09</td>
</tr>
<tr>
<td>(Romanian Spotted Cattle)</td>
<td>± S X</td>
<td>0,70</td>
<td>0,68</td>
<td>0,45</td>
<td>0,94</td>
<td>0,66</td>
<td>0,65</td>
<td>1,08</td>
<td>10,00</td>
</tr>
<tr>
<td>Sc Agroserv Srl</td>
<td>X</td>
<td>133,23</td>
<td>136,73</td>
<td>68,17</td>
<td>160,47</td>
<td>49,53</td>
<td>52,50</td>
<td>192,35</td>
<td>560,22</td>
</tr>
<tr>
<td>(Romanian Spotted Cattle)</td>
<td>± S X</td>
<td>0,86</td>
<td>0,80</td>
<td>0,53</td>
<td>1,13</td>
<td>0,35</td>
<td>0,34</td>
<td>1,72</td>
<td>14,33</td>
</tr>
<tr>
<td>Sc Stazoo Srl</td>
<td>X</td>
<td>137,70</td>
<td>139,47</td>
<td>72,13</td>
<td>165,46</td>
<td>51,88</td>
<td>55,86</td>
<td>205,51</td>
<td>670,28</td>
</tr>
<tr>
<td>(Black Spotted Romanian Cattle)</td>
<td>± S X</td>
<td>0,43</td>
<td>0,44</td>
<td>0,29</td>
<td>0,59</td>
<td>0,20</td>
<td>0,19</td>
<td>0,77</td>
<td>7,43</td>
</tr>
</tbody>
</table>

On the basis of the values obtained following the biometrical measurements were calculated the following corporal indexes of conformation: i.f.c.l – the index of the lateral corporal format; i.f.l - the index of the lateral format of the torso; i.a.t – the index of the thorax depth; i.r – the index of lustiness; i.d.i - the index of the height difference; i.m - the index of massiveness; i.b.p – the index of the pelvis-pectoral and i.f.c - caudal level – the index of the corporal format in caudal level (table 6)
Table 6

The average values of the main corporal indexes, determined on the basis of the biometrical measurements conducted on the milk cows, exploited in the studied farms:

<table>
<thead>
<tr>
<th>Farm</th>
<th>The sample’s statistics</th>
<th>i.f.c.1 %</th>
<th>i.f.1 %</th>
<th>i.a.t %</th>
<th>i.r %</th>
<th>i.d.1 %</th>
<th>i.m %</th>
<th>i.b.p %</th>
<th>i.f.c caudal level %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sc Agrolact Srl (Bălțată românească)</td>
<td>( \bar{X} )</td>
<td>120.65</td>
<td>42.75</td>
<td>51.57</td>
<td>121.60</td>
<td>101.93</td>
<td>465.90</td>
<td>95.40</td>
<td>39.86</td>
</tr>
<tr>
<td>± S ( \bar{X} )</td>
<td>0.21</td>
<td>0.13</td>
<td>0.15</td>
<td>0.53</td>
<td>0.11</td>
<td>9.53</td>
<td>0.24</td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td>Sc Agroserv Srl (Bălțată românească)</td>
<td>( \bar{X} )</td>
<td>120.43</td>
<td>42.48</td>
<td>51.16</td>
<td>119.86</td>
<td>102.64</td>
<td>419.39</td>
<td>94.35</td>
<td>38.40</td>
</tr>
<tr>
<td>± S ( \bar{X} )</td>
<td>0.22</td>
<td>0.14</td>
<td>0.19</td>
<td>0.63</td>
<td>0.16</td>
<td>8.98</td>
<td>0.25</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>Sc Stazoo Srl (Bălțată cu negru românească)</td>
<td>( \bar{X} )</td>
<td>120.15</td>
<td>43.60</td>
<td>52.38</td>
<td>124.23</td>
<td>101.29</td>
<td>486.03</td>
<td>92.88</td>
<td>40.07</td>
</tr>
<tr>
<td>± S ( \bar{X} )</td>
<td>0.61</td>
<td>0.33</td>
<td>0.37</td>
<td>0.96</td>
<td>0.30</td>
<td>13.66</td>
<td>0.56</td>
<td>0.43</td>
<td></td>
</tr>
</tbody>
</table>

As a general conclusion we can sustain that the animals included in the study, exploited in the three farms, represent overall reports which denote a well proportioned body development, engaged in the morpho-productive type from which they come from with the mention that in the future we want an improvement of the value of the index of the thorax depth.

Chapter VIII refers at the raising and exploiting perspectives of the taurines from the Alba County. Given that the problems that puzzle the animal science the Alba County are identical and inter-dependent with those at the national level we made an analogy between the county and the country when we debated the subjects of this chapter. In this chapter we presented the difficult situations with which are confronted the raising and exploitation of the animals in this region, and on the other hand the main objects established for the development of this important sector of the animal science, as well a solutions and measures for their accomplishment.

Broadly the perspectives of taurines raising at territorial level (Alba County) and national level are presented suggestively through the main objectives established for the development of this important sector of the animal science (C Velea- 2012, the website MADR):

- the increase of the taurines productions quantitative and qualitative;
- the realization of some products with physical-chemical characteristics and superior organoleptic characteristics;
- obtaining productions and products with minimal specific consumptions;
- the realization of an optimal animal loading on the surface unity in view of using the production potential of the food basis;
- the optimal valorization by the producers (farmers) of the productions obtained;
- the financial maintenance of the milk production, on a stately line, to equilibrate the valorization price at the producer, with those accomplished in the EU.

- the equilibrate adjustment of the price reports between the processing and production sector;
- preventing the practice of the dumping price for the cattle products and productions on the domestic market by the foreign competitors.

Chapter IX is allocated to the conclusions and the recommendations. Thus we can summarize the following conclusions:

- concerning the productive performances, the taurines population studied contain nucleus with a elevated genetic value, result of the applied exploitation technologies, of an equilibrated management given the socio-economical conditions from the country;
- synthesizing the results of the researches conducted on the taurines population from the studied farms we can give the conclusion that these are well adapted at the environment conditions specific to the region and if conditions of exploitation and management closed to the ones adequate are provided, the milk cows can respond through productive performances closed to the actual genetic potential;
- from the analysis of the results obtained and debated during the researches, we came to the conclusion that, overall the milk which comes from the studied farms, corresponds to the standards of the EU regarding the NTG and NCS.
- from the analysis of the accomplished reproduction indexes, we can assert that the number of milk cows studied manifests relatively good reproduction indexes if we refer to the general situation from our country, but if we refer to the optimal values desired,
there are some inconveniences, and here we speak of the interval between calving which exceeds at the majority of the farms the average of 400 days and implicitly at the service- period which exceeds at the majority of the farms the average of 100 days in the conditions in which the ideal would be of 35-82 days (Velea C and colab);

- from the analysis of the morphological characteristics, we can conclude that the number of studied taurines have a good corporal development, even very good, which offers a biological platform favorable for a productive life;

- concerning the scored obtained from the examined cows, we can observe that the animals correspond from the point of view of the corporal conformation with the breed they come from;

- the corporal indexes calculated following the biometrical measurements indicate an harmonious development, the studied animals being well proportioned, with constitutions that include them in the morpho-productive types characteristics to the milk production (for the breed Bălțată cu negru românească) and mixed (Bălțată românească –Simental).

We recommend: in the alimentation of the milk cows the use of hay, of the concentration mix, of the silos and eventually if it is possible, the brewers grains during the summer in the same quantities as during the winter because it is good for the milk production growth (uni-season fodder). In the same time we recommend the maintenance in loose housing with individual berths, with or without exit at the paddock (two possibilities), internal feeding front (or external- in case there is a paddock). The loose housing has the advantage of reducing the need of the work force and improving the movement regime. It is beneficial the optimal structuring on age categories which allow the replacement of the reform from the own reproduction. The use of modern monitoring systems of the number of animals (for exemple Sc Stazoo Srl), because in the future will improve the reproduction and production performances.

The results and conclusions taken out of the researches conducted on these taurines exploited in the Alba County have in view to serve, to the extent in which the decision factors implicated in improving the taurines, will consider that they prove their practical utility, as elements of knowledge of the actual stage of improving and using the results in the orientation
of the future technical actions and of the making and application of the regional program of improvement, as integrated part of the National Program of Taurines Improvement.

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