

## AGRICULTURAL ANIMAL PRODUCTION IN MURES COUNTY COMPARED WITH THE NATIONAL LEVEL

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*The assessment of the productive potential of Romanian agriculture implies emphasizing the particularities of the areas and harmonizing the territorial development strategies of agriculture. The most operative way of highlighting the productive potential is analyzing the obtained results in the agricultural production by different geographic and administrative-territorial areas within the country. To illustrate such a process, the current paper present the analyses of the performances registered in Mures County compared with the national level.*

**Key words:** specific differences, division into zones, efficiency criteria

The division of agricultural production into zones is a subject with substantial traditions at national and international level as well. The different productive potential of several areas in the country, the diverse experience encountered in different geographic areas are essential premises for optimizing results as a global effect at the level of the total agricultural area of the country. For instance, the paper presents particular aspects of livestock production of Mures County in comparison with the national level.

### MATERIAL AND METHOD

The data base about the productions obtained on activity branches in the agriculture of Mures County is created based on documents and development strategies elaborated by the Council of Mures County, the National Institute of Statistics and the County Direction of Statistics. As methodological instrument it has been mainly utilized the indicators of average values as expressions of the productive potential by activity branches, and the evolution of the main indicators is emphasized by the trends obtained using the method of analytical adjustment.

### RESULTS AND DISCUSSIONS

After the year of 2001, the number of domestic animals in Mures County increased for all species (*tab. 1*).

Table 1

The number of domestic animals in Mures County						
Species	Number of animals – heads					
	2001	2002	2003	2004	2005	2006
Bovine	75023	77943	85325	90642	94043	96894
Bovine for meat	20764	19527	22195	9544	11667	16792
Ovine	283527	300149	317594	320952	345269	370794
Swine	158850	171536	174582	155753	166623	143473
Birds	1395015	1111700	1470650	1627380	1626620	1630740

Source: Consiliul Județean Mureș, Prioritățile dezvoltării județului 2007 – 2013

The trends calculated for each main species confirm this reality even by the comparative analysis of primary data.

In the case of bovine species, the increases are obvious in each year of the analyzed period (2001-2006) (*fig. 1*).

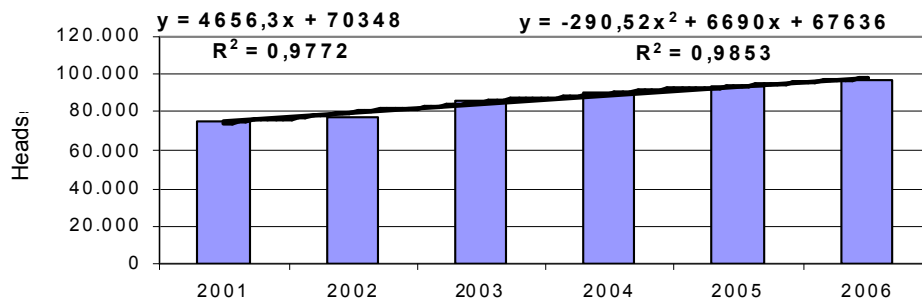


Figure 1 The evolution of the number of bovines in Mures County

The linear trend is confirmed by the value of the coefficient of determination (0.9772), and the regression line indicates that, on average, the number of bovine increased yearly with 4,656 heads. The third degree parabolic trend is basically overlapping the linear one, fact that confirms the linear increased tendency of the number of animals in Mures County.

In the case of ovine, the number increased constantly in the analyzed period (2001-2006). The adjusted trend, which reveals, on average, the evolution of the number of this species in Mures County, is presented in *fig. 2*.

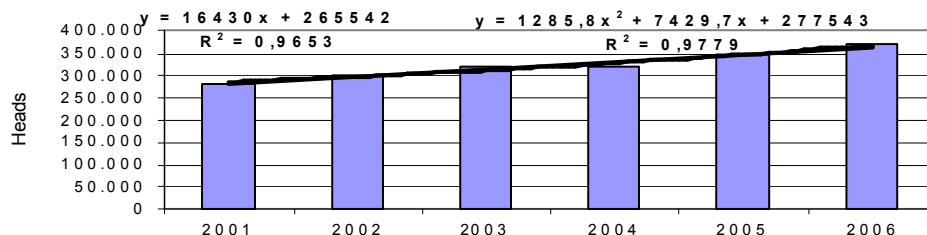


Figure 2 The evolution of the number of ovine in Mures County

In the case of ovine species, the evolution is almost linear as well. The estimated coefficient of the linear trend confirms that, on average, the number of ovine increased yearly with 16,430 heads. The value of the coefficient of determination shows that the linear trend is representative. Additional information is given also by the third degree parabolic trend which is overlapping the linear one.

At national level, the number of animal increased with some oscillations in the whole period of time 2001-2006 (*tab. 2*).

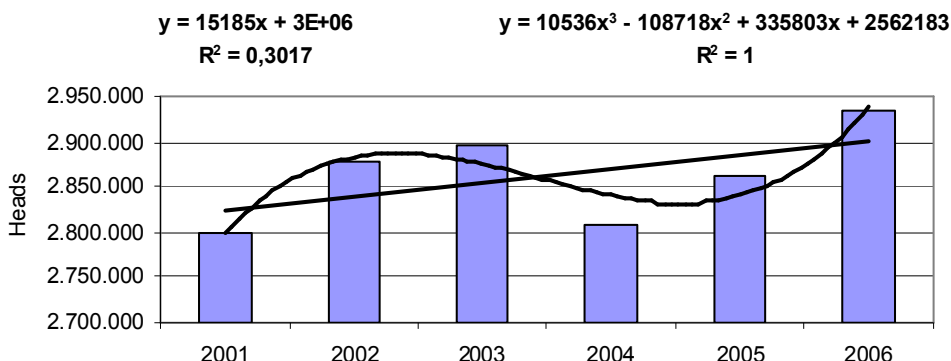
Table 2

**Numbers of domestic animals at national level**

Species	Number of animals – heads					
	2001	2002	2003	2004	2005	2006
Bovine	2799817	2877803	2897082	2808061	2861671	2933596
Ovine	7776329	7945364	8124896	8086043	8297723	8405613
Swine	4446828	5058161	5145448	6494666	6622302	6814605
Birds	71413325	77378887	76616335	87014405	86552203	84990600

Source: INS 2007

The intensity of the evolution of the number of animals, for the bovine species, is emphasized by the adjusted trend (*fig. 3*).

**Figure 3 The evolution of the number of bovine at national level**

At national level, the linear tendency in the evolution of bovine is not present anymore. But, the third degree parabolic trend reflects quite well the decrease of the number of animals in 2004, the coefficient of determination ( $R=0.8496$ ) confirming that it is representative.

The adjusted trends for the evolution of the number of ovine at national level confirm that in the case of this species, increases has been registered, excepting the year of 2004 (*fig. 4*).

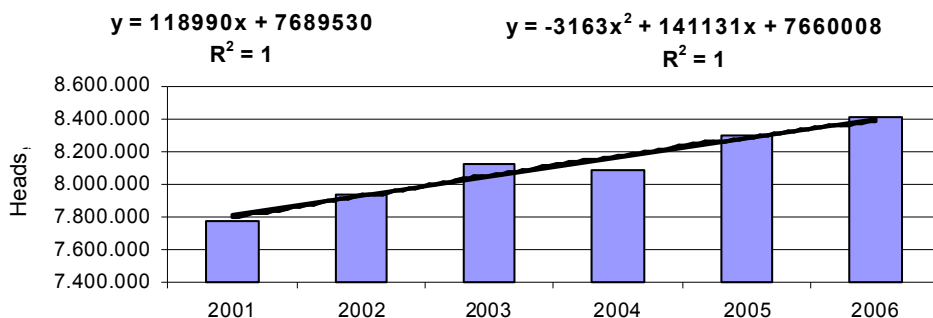


Figure 4 The evolution of the number of ovine at national level

The linear trend is representative for the evolution of the number of this species ( $R=0.9465$ ), and its estimated coefficient confirms that, on national level, the average number of ovine increased yearly with 118,990 heads. Regarding the average animal productions, researches focused mainly on average cow milk production. The primary data analysis confirms that the average cow milk production on head indicates clear oscillations at the level of Mures County, but within an acceptable level, while the average production at national level is constantly increasing, but slowly (*tab. 3*).

Tabelul 3

The evolution of the average productions at animal main products in Mures County

Product	U/M	Average production					
		2001	2002	2003	2004	2005	2006
Cow milk	l/head	3667	3499	3487	3575	4120	3727
Sheep and goat milk	l/head	97	97	102	95	87	91
Meat	kg/head	99	108	111	21	16	16
Eggs	no/head	112	129	117	110	112	129

Source: Consiliul Județean Mureș, prioritățile dezvoltării județului 2007 – 2013

The trend of the average milk production at Mures County level is presented in *fig. 5*.

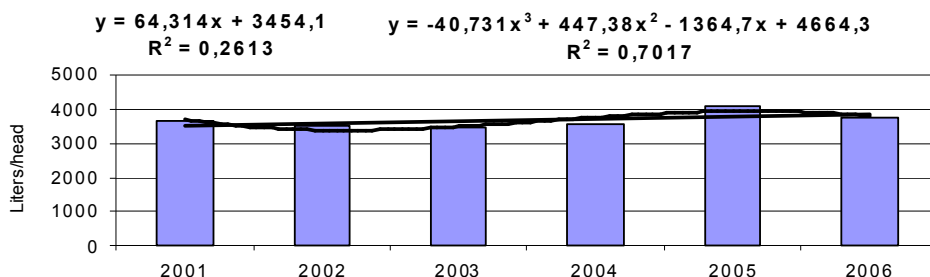


Figure 5 The evolution of the average production of cow milk in Mures County

The linear trend indicates an ascendant evolution of the average cow milk production in Mures County, but with a low annual increase quota ( $b = 64.31$

liters). However, the linear trend is not sufficiently representative. In the case of third degree parabolic trend, the coefficient of determination ( $R=0.7017$ ) shows that it is representative.

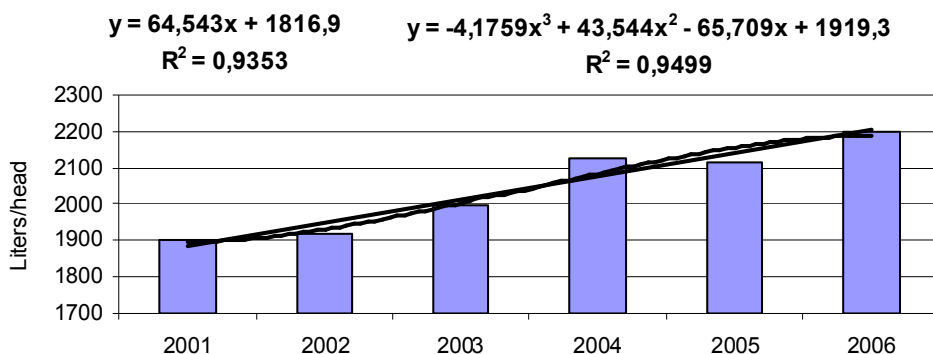
Table 4

**The evolution of the average productions at animal main products in Romania**

Product	U/M	ROMANIA - Average production					
		2001	2002	2003	2004	2005	2006
Cow milk	l/head	1899	1916	1992	2130	2118	2202
Sheep and goat milk	l/head	40	42	43	54	63	75
Ovine slaughter weight	kg/head	14,65	14,89	16,61	20,48	13,73	12,01
Eggs	no./head	84	83	86	118	118	114

Source: INS-DJS Mureș, 2007

On national level, the tendency of the average production is increasing, but the level of average milk production is very low for the whole analyzed period of time. This fact is confirmed by the adjusted trends, in the linear form and in third degree parabolic form as well (*fig. 6*).



**Figure 6 The evolution of the average production of cow milk at national level**

The linear trend is confirmed in this case ( $R = 0.9353$ ), annual increases are however very low ( $b=64.54$ ), and the absolute level of the average production is very low.

The primary analysis of data regarding the average cow milk production, in Mureș County, comparative with the average production on national level, leads to the unquestionable conclusion that the efficiency in Mureș County is superior to those obtained at the national level. The differences between the average cow milk production in Mureș County and the same indicator at the national level is indicated by the Student test. The calculated  $t$  value (23.305) exceeds the critical  $t$  value, even for at a probability of error of 0.1% (0.3923), which confirms that the average cow milk production in Mureș County is significantly greater than the average production obtained at national level.

## CONCLUSION

The analyzed data reveal an increasing tendency of the number of animals and of the levels of productions. The animal husbandry sector and especially the ruminants has always been a strong point in Mureș County. The weak points of the livestock sector are: the degree of specialization of farms, the degree of technology, the milk hygiene, the feeding technique and the instability of the number of animals as well as of the average returns registered.

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