# THE EFFECT OF CROSSBREEDING ROMANIAN SPOTTED WITH SEVERAL BREEDS IN S.C. AGRICOLA S.A. FARM FROM SATU MARE COUNTY

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**Abstract**

*The researches refer to the bulls effects of breed Simmental utilization for crossbreed with cows of breed Romanian Yellow Spotted on main indexes for the milk productions: age of the first fertile insemination, the age of the first calving, the period (length) of the normal lactation and total lactation, fat and protein percent, length mammal repose and calving period. Analyses comparative for normal and total lactations between Romanian Spotted pure breed and several crossbreed disclosure an supplementary of milk production just for crossbreeds BRxBG* by 12, 57%, and for the others resulted a decrease with 2,76% for BRxSIM* and 16,62% for BRxBA*. Same analyses but comparative on first lactation disclosure difference significantly, thus crossbreeds BRxBG achieves an addition of 819 kg milk, 18%, BRxSIM- crossbreed achieves a decrease with 598 kg milk respectively 13,14% and BRxBA crossbreed achieves a decrease with 351 kg milk, 7,71%. The differences for milk production level from lactations 2-4 has reduced significantly with tendency to equalization between cow milk by Romanian Spotted breed and crossbreed groups.*

**Key words:** Romanian yellow spotted, milk productions, crossbreeding

## INTRODUCTION

Due to demographic growth and consumers' preferences for animal products, almost everywhere in the world cattle breeding has been one of the most important human activities. Currently, the cattle account for 65% (UVM) of the world's total number of domestic animals and represent the main source for milk and meat, accounting for more than 95% of the milk production and 33% of the meat production. Considering the increased demand for milk and meat, we can do this by increasing the number of cattle and by genetically improve them through science and better technologies [1]. Genetics contributed with much knowledge to animal production increasing the efficiency of rearing, breeding and using the various species of farm animals. The Romanian Spotted Cattle has spread quickly due to its qualities so that it represented 37% from the Romanian cattle stock in 1955 and 44% in 1969. Nowadays, it represents 36% due to the establishment of a new breed, Black Spotted Romanian Cattle, which has partially inhabited the initial area of the Romanian Spotted Cattle.

## MATERIAL AND METHOD

The researches accomplished the cow farm SC Agricola Srl from Satu Mare county, researching 528 the heads cow milk, which had totalized 1603 lactations inclused in the Official Checking of the Production (OCP) and breaded in the Satu Mare county. The research objectives were on settlement the main milk production traits and few most important reproductive traits for Romanian Spotted pure breed and some traits for crossbreeds groups with several breeds. All researches results were structured for each breeding stock analyzed which than were statistically processed and interpreted for prime indexes for the milk productions. Also established main zooeconomical index, thus: precocity, birth rate, and average index of reform and lenght of exploitation with milk production on economically life.

## RESULTS AND DISCUSIONS

The results obtained disclosure significantly difference between crossbred groups and Romanian Spotted breeding at cow farm Sc Agricola Srl. Thus though utilization Österreich Fleckvieh bulls to

crossbred with Romanian Spotted bring about growing weight body, age to first insemination achieves is by 759±22,85 days (approximative 25 months) with 38% delayed facing to VPM standard of Romanian Spotted of 18 Months. Good value for age of first insemination achieves crossbreds BRxBG of 621,14±6,23 days (20 months) succeeded of crossbred BRxSIM with 709,39±44,69 days (23 months). The researches indicate that first calving are arhieved to 33 months and 15 days at BR, 29 months and 23 days at crossbred BRxBG and 34 months and 10 days for crossbred BRxBA%. Length total lactation disclosure values between 369,88 days (BRxBA) and 407,94 days to BRxBG with production between 4977 kg milk with 4,04% fat and 201 kg total fat and 173 kg total protein (BRxBA) and 7134 kg milk with 4,16% fat with 297 kg total fat and 251 kg total protein for crossbred BRxBG. The crossbreds BRxSIM achieve the average for length lactation by 406 days with milk production of 6197 kg milk with 4,18% fat and 260 kg total fat and 219 kg total protein. This production is closer to performance an average of Simmental breaded in country with developed animal husbandry. The researches from SC Agricola cow farm disclosure of constantly average milk production at normal lactation on the average of 5038,67±59,51 kg milk with4,12% fat and 3,41 % protein for Romanian Spotted, 5671,78±43,94 kg milk with 4,14% fat and 3,47% protein for crossbred BRxBG, 4899,55±115 kg milk with 4,15% fat and 3,34% protein for BRxSIM and 4201,27±76,1 kg milk with 4,02% fat and 3,31% protein on average for crossbred BRxBA. The researches on milk production on normal lactation for first lactations disclosure of valuably milk production, thus: 5371 kg milk with 301 lactation days on crossbred BrxBG vis a` vis Romanian Spotted pure breed with 4552 kg milk on 297 lactations days with difference by 819 kg milk, 15,24%. Present situation is different compared with crossbred BRxSIM with 3954 kg milk on 301 lactations days with +598 kg milk, 15,12%, and with 351 kg milk compared with BRxBA. The calving interval is on the average of 451,34 days with a birth rate of 80,87% with valuably evolution in according of crossbred. Thus, Romanian Spotted have value on 444 days for calving interval with 82,2% birth rate, 460 days with 79,3% birth rate for crossbred BRxBG, 468 days with 77,9% birth rate on crossbred BRxSIM% or 443 days with 82,4% birth rate by crossbred BRxBA. The length of exploitation is on the average of 3,1 lactations or 3,83 years with 19888 kg milk and 825 kg totaling fat for economic life. The length of exploitation for Romanian Spotted breeds was 3,4 lactations or 4,14 years with 20756 kg milk and 860,7 kg fat.

Table 1

The main milk production traits for Romanian Spotted and crossbred with several breed from SC Agricola farm, Satu Mare county

| Traits | UM | BR* | BR X BG* | BR X SIM* | BrxBA* |
|---|---|---|---|---|---|
| Lactations | n | 508 | 802 | 97 | 196 |
| Age of first insemination | day | 735,77±13,56 | 621,14±6,23 | 709,39±44,69 | 759,19±22,85 |
| Age of first calving | day | 1019,17±13,56 | 905,14±6,23 | 993,39±44,69 | 1044,19±22,8 |
| Lactation length | day | 383,41±4,73 | 407,94±4,17 | 406,31±9,96 | 369,88±6,17 |
| Milk quantity | kg | 6104,79±99,09 | 7134,03±85,37 | 6197,05±19701 | 4977,11±115 |
| % Fat | % | 4,14±0,01 | 4,16±0,01 | 4,18±0,02 | 4,04±0,02 |
| Total fat | kg | 253,16±16 | 297,26±3,57 | 259,76±8,67 | 201,55±4,82 |
| % protein | % | 3,42±0,01 | 3,49±0,01 | 3,37±0,03 | 3,33±0,01 |
| Total protein | kg | 214,90±3,65 | 250,99±3,10 | 219,05±8,07 | 173,07±4,85 |
| Normal lactation length | day | 297,53±0,89 | 299,73±0,63 | 302,09±0,93 | 297,57±1,33 |
| Milk quantity | kg | 5038,67±59,51 | 5671,78±43,94 | 4899,55±115 | 4201,27±76,1 |
| % Fat | % | 4,12±0,12 | 4,14±0,01 | 4,15±0,03 | 4,02±0,02 |
| Total fat | kg | 207,79±2,49 | 234,61±1,84 | 203,64±5,13 | 168,71±3,15 |
| % protein | % | 3,41±0,01 | 3,47±0,01 | 3,34±0,03 | 3,31±0,02 |
| Total protein | kg | 175,23±2,18 | 197,51±1,59 | 170,78±4,85 | 144,11±3,13 |
| Mammary repose | day | 58,0±1,70 | 57,39±1,37 | 62,71±3,17 | 65,30±2,87 |
| Calving interval | day | 444,88±6,58 | 460,20±9,64 | 468,10±11,74 | 443,98±9,77 |

* BR-Romanian Spotted, BG- Deutsches Fleckvieh, SIM-Simmental, BA- Österreich Fleckvieh

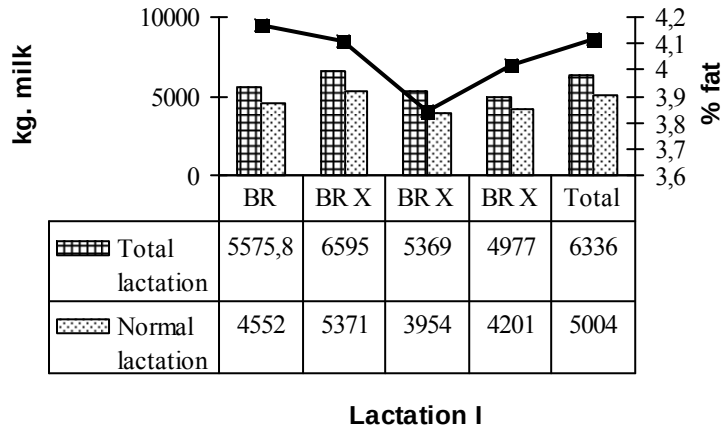


Fig.1. Effect of crossbreeds breeding on milk production traits for normal and total lactations

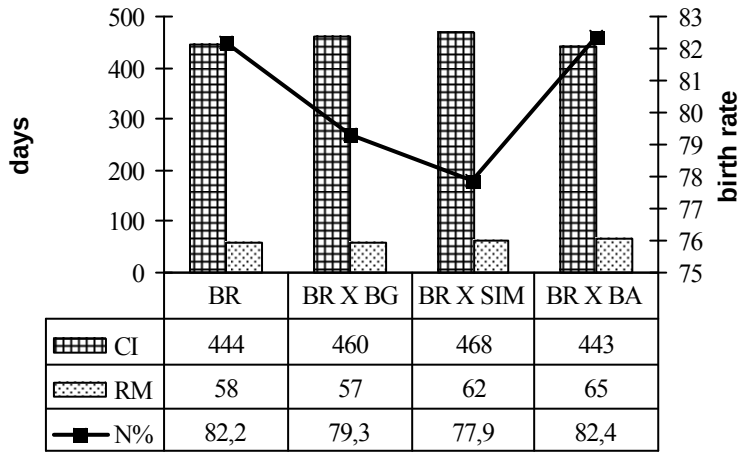


Fig.2. Effect of crossbreeds breeding on milk production traits for calving interval and mammal repose length correlated with birth rate

Table 2
The main comparative zoo economical index for Romanian spotted pure and crossbreed with several breeds from SC Agricola farm, Satu Mare County

| Traits | U/M | Animal groups | | | |
|---|---|---|---|---|---|
| | | BR | BRxBG | BRxSIM | BRxBA |
| | Lact. | 508 | 802 | 97 | 196 |
| Age of first insemination | days | 735 | 621 | 709 | 759 |
| Age of first calving | days | 1019 | 905 | 993 | 1044 |
| Length lactation | days | 383,41 | 407,94 | 406,31 | 369,88 |
| Calving interval | days | 444,88 | 460,20 | 468,10 | 443,98 |
| Average heads | head | 149 | 315 | 18 | 46 |
| Reform index | % | 24,15 | 31,25 | 14,47 | 19,30 |
| Birth rate | % | 82,2 | 79,3 | 77,9 | 82,4 |
| Length of exploitation | lact. | 3,4 | 2,54 | 5,39 | 4,26 |
| | years | 4,14 | 3,20 | 6,91 | 5,18 |
| Milk and fat production on economic life: | | | | | |
| -milk | kg. | 20756 | 18120 | 33402 | 21202 |
| -fat | kg. | 860,7 | 755 | 1400,1 | 858,6 |
| Daily average milk production on: | | | | | |
| -total lactation | kg. | 15,92 | 17,49 | 15,25 | 13,46 |
| -length of exploitation | kg. | 13,74 | 15,51 | 13,24 | 11,21 |
| -all life | kg. | 8,20 | 8,74 | 9,50 | 7,22 |

## CONCLUSIONS

Some of the conclusions are: SC Agricola farm have a good and very good milk level production; Analyses comparative for normal and total lactations between Romanian Spotted pure breed and several crossbreed disclosure an supplementary of milk production just for crossbreeds BRxBG* by 12, 57%, and for the others resulted a decrease with 2,76% for BRxSIM* and 16,62% for BRxBA*. Same analyses but comparative on first lactation disclosure difference significantly, thus crossbreeds BRxBG achieves an addition of 819 kg milk, 18%, BRxSIM- crossbreed achieves a decrease with 598 kg milk respectively 13,14% and BRxBA crossbreed achieves a decrease with 351 kg milk, 7,71%. The differences for milk production level from lactations 2-4 has reduced significantly with tendency to equalization between cow milk by Romanian Spotted breed and crossbreed groups.

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