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Effect of Breeding Technology of Young Cattle from the Valdostana Breed in Agricultural Conditions of Cluj County, Transylvania Region

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Abstract. Valdostana is a dual-purpose breed originally from Italy, Valle d'Aosta region. There are three Valdostana breeds that differ in their morphological characteristics, production of milk and meat and temperament. These breeds are: Valdostana Pezzata Rossa (VPR), Valdostana Pezzata Nera (VPN) and Castana (CB). Researches have been conducted in the farm SC Modern Farm S.R.L. during February 2012-May 2013 on a herd of 25 Valdostana cattle, imported from Italy. Body growth and development of young cattle was appreciated on the basis of weight and body measurements determined at different ages: at 2 weeks, 3 months, 6 months, 12 months and 16 months. During the research period (487 days), average daily gain was betwen 0.513 kg and 0.718 kg, as follows: 0.513 for Valdostana Pezzata Rossa (VPR) with 280 kg BW, 0.575 kg for Valdostana Pezzata Nera (VPN) with 310 kg BW and 0.718 kg for Castana breed (CB) with 378 kg. Regarding the resulted morphological index of lateral body shape specific values for Valdostana breed were correlated with animals' age, as follows: 114% to VPR, 112% to VPN and 117% to CB. The results show good accommodation for all three Valdostana breeds in the new breeding climate as well as resistance to ordinary technology conditions.

Keywords: Valdostana, breeding, daily gain, morphologic traits, Transylvania

Introduction. Valdostana is a dual-purpose breed originally from Italy, Valle d'Aosta region, Alps Mountains, where almost all individuals are bred (85%). Particularly docile and strong, it is very well adapted to harsh climate and also resistant to ordinary pathologies (Mazza *et al.*, 2013) but Valdostana Pezzata Nera and Castana breed together show a lively quite aggressive temperament when grazing (Sartori *et al.*, 2010).

Valle d'Aosta region has an area of 3.236 km^2, with an average height of the region exceeding 2.100 meters [3]. The breed has robust constitution, docile temperament and shows good adaptability and health, and there are three breeds, which differ by their morphological characteristics. Valdostana Pezzata Rossa (VPR) has a robust constitution and a conformation corresponding to mixed type of production (milk-meat), whiles the Pezzata Nera (VPN) and Castana (CB), predominantly for meat production, are massive, with a harmonious exterior appearance, which is distinguished by the pronounced breadth and depth [4].

Research on Valdostana breed in Romania were not made at all, is a new breed for our country and in Italy fighting ability has been investigated more in the breeds.

Aims and Objectives. This study focused on the impact of breeding technology on young livestock of Valdostana breed, farmed in the Jucu province of Transylvania region.

Materials and Methods. The study was conducted on a herd of 25 females, born between January and February 2012, imported in Romania in February 2012 at the age of 1-2 weeks. Body growth and development of young cattle was appreciated on the basis of weight and body measurements determined at different ages: 2 weeks, 3 months, 6 months, 12 months and 16 months. The body measurements refer to height at withers, height at croup, length of the trunk, chest width, chest depth, chest circumference, croup width, on which the corporal indices were determined.

Results and Discussions. Analyzing the growth process of the young females until age of 16 months, it was established that they have a body weight at two weeks about 35.71 kg, 74.2 cm waist, at six months of 129.12 kg, waist 93, 5 cm and at 16 months 327.78 kg, waist 108 cm, average daily gain in the first year of life was 565 g/day, and for heifers 12-16 months of age, 715 g. Growth coefficient was 43.99% at one year and 59.60% at 16 months.

Tab. 1

Means (± SE) of body measures, in cm, to young cattle of Valdostana breed

Age	Height at Withers	Height at Croup	Diagonal length of trunk	Chest width	Croup width	Chest circumference	Depth of chest
2 weeks	74.2±0.37	76±0.82	67.8±0.74	15.3±0.35	15.7±0.29	77.3±0.97	30.5±0.87
3 months	83.5±0.51	85.5±0.61	87±0.55	20±0.21	21,5±0.45	109.5±0.87	38±0.46
6 months	93.5±0.47	96±0.77	101±0.97	24±0.34	24.8±0.14	126±1.11	44.5±0.35
12 months	103±1.04	104±1.08	112±1.16	27±0.44	29±0.33	147±1.64	50.5±0.31
16 months	108±1.21	112±1.11	125±2.04	32±0.39	36±0.81	156±2.31	53±0.29
Adult breed*	125	127	145	39.5	45	175	61

*breed standard value

Tab. 2

Means (± SE) of daily gain and growth dynamics in young cattle of Valdostana breed

Period	Initial weight (kg)	Final weight (kg)	Average daily gain (g)	Total Increase (kg)	Growth coefficient (%)
0 – 1 months	35.71±1.82	43.95±2.13	588±18.46	8.24±0.28	7.99
1 – 3 months	43.95±2.13	76.65±2.45	545±20.11	32.7±0.31	13.93
3 – 6 months	76.65±2.45	129.12±2.64	583±14.41	52.47±0.35	23.47
6 - 12 months	129.12±2.64	241.98±2.37	627±10.40	112.86±1.20	43.99
12 – 16 months	241.98±2.37	327.78±3.01	715±7.89	85.8±0.77	59.60
Total/ Average	35.71±1.82	327.78±3.01	600±12.41	292.07±0.65	59.60

During the researches period (487 days), for all three breeds, average daily gain was betwen 0.513 kg to 0.718 kg, as follows: 0.513 for Valdostana Pezzata Rossa (VPR) with 280 kg BW, 0.575 kg for Valdostana Pezzata Nera (VPN) with 310 kg BW and 0.718 kg to Castana breed (CB) with 378 kg. CB compared to VRP show a higher average daily gain by 40% and 24% regarding to VBP and BW higher with 35% respectively 22%. Growth coefficient calculated for body weight at the age of 16 months in relation to the adult weight, reveals value of 51% for VPR, 56% for VPN and 63% for CB. Regarding the morphological resulted index of lateral body shape specific values for Valdostana breed it was correlated with animals' age, as follows: 114% to VPR, 112% to VPN and 117% to CB.

Conclusion. The results show good accommodation for all three Valdostana breeds in the new conditions of breeding from Modern Farm Jucu, Transylvania region, although it is a breed from the Alps, it demonstrates that it is a strong breed and it is very apt to accommodation in new breeding climate and also resistant to ordinary technology conditions.

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