

N. L. Rieznykova. The peculiarities of qualitative content of Ukrainian Whiteheaded cows' milk

Introduction. Whiteheaded Ukrainian – native breed, animals of which are characterized with longevity, don't require much care, have ability to compile rather high milk yield (particularly, record-yielding cow of the breed Orbita during 300 days of the 7-th lactation – 12 339 kg) with rather high fat yield. However, now this breed is registered as endangered. Breed conservation should be done not only by way of state subsidizing, but as well and more effectively by way of breed commercialization. Like majority of local breeds, it can't compete with commercial breeds on production quantity, but can do it on quality of it.

Quality, namely colour, taste and aroma of fresh raw milk are caused by its content, particularly fat acid content and aroma compound (aldehydes, carbon acids, amino compounds and so on). So, it seemed actual to investigate aroma composition, particularly, availability and amount of aroma compounds, ω -3 and ω -6-acids and fatty acid content of Whiteheaded Ukrainian cows' and analogous groups of other breeds or crossbreds' milk.

Besides it, milk value is determined as well by its «technology suitability», thus, suitability to processing, one of important indexes of which is milk homogeneity. Homogeneity is found as diameter of fat globules. Small fat globules diameter – important factor for fat storing in cheese curd, so, for avoiding its loss with whey.

So, **the aim** of the work was the defining of aromatics, fatty acid content and the diameter of fat globules of milk of cows of Whiteheaded Ukrainian breed and its crossbreds with Holstein.

Materials and methods. Sampling was done from animals of Whiteheaded Ukrainian (WhU) and its crossbred with Holstein (WhU+50%H), which were kept at the same conditions (one shed and the same ratio) of «Podolian host-2004» Ltd. of Khmelnytskyi region. Sampling was done at dinner time by hands from cows, which were at the same stage of lactation (3-4 month) and were not the half- or whole sibs. Taking into account the possibility of objective simultaneous estimation at the equipment only 2 contrast samples, the sampling was done from 4 animals. Two reiterations of the experiment were done.

Fatty acid content was defined at chromatograph VARIAN 3900, equipped with column CP-Select CB for FAME, 100 mmx0.25mm, DF-0,25 (Varian firm) according to state standard GOCT P 51483-99 «Fats and oils. The defining of individual fatty acids methyl ethers mass share to its sum by the method of gas chromatography». The preparation of experimental samples was done due to state standard GOCT P 51486-99 «Fats and oils. Getting fatty acids methyl ethers».

Results. The analysis of milk aromatic constituents of experimental samples doesn't confirm the predominance of any breed, though it should be checked at bigger massive.

The important characteristics of milk aromatic peculiarities is lactones availability and its concentration. It should be admitted, that the concentration of delta-dodecalactons is almost 3 times higher (4,25 mg/kg) in the milk of half-bred Holstein cow compared with Whiteheaded Ukrainian (1,66). Though, taking into account not-satisfying in number massive, this result should be checked. It's a pity,

but the effect of heterosis was not investigated, though the latter, as we know, is found on traits, which provide the viability of species (live weight, daily gain and so on). To investigate the influence of Holstein blood share on traits was not possible as well, as there were only half-bred animals in the herd.

There were found ramified fatty acids with chain length 13-17 carbon atoms at all researched samples in the form of iso- and anteiso-, which have anti-tumour activity. It should be admitted, that healthy anti-sclerotic and anti-ischemic ω -6 fatty acids, particularly, arachic acid, is found not at all samples, though linolic (ω -3) and its conjugate have almost equal distribution at all researched samples.

Comparison of milk fatty acid content of Whiteheaded Ukrainian, its crossbreds and Black-and-White breed of Sumy region (again, sooner, crossed with Holstein) showed predominance of milk of Whiteheaded cows and its crossbreds on certain fatty acids. Thus, animals of Black-and-White breed have considerably higher (in average 30,76 %, n=5) content of palmitic and stearic (13,96 %) acids (versus 23.8 on palmitic and 10.5 % on stearic of Whiteheaded Ukrainian and its crossbreds), which, as it is known, negatively influence human organism, creating cholesterol «clots» in vessels, though content of useful oleic acid proved to be higher at the milk of Black-and-White cows.

It should be stressed, that the milk of as Whiteheaded Ukrainian, so its crossbreds is suit for cheese-making, as the most profitable cheese-making is done of milk with fat globules' size 1.5-3.0 mkm. For best human organism assimilation, the milk with smaller fat globules is better as well. So, researched milk samples meet all above-mentioned demands, as the largest number of globules have diameter 1,0-3,0 mkm.

Conclusions. 1. The speed of autochthonous breeds of Ukraine disappearing, particularly Whiteheaded Ukrainian, demands the finding out the other ways of its conservation, particularly, its production commercialization.

2. Milk as Whiteheaded Ukrainian, so its crossbreds with Holstein has rich fatty acid content.

3. The diameter of predominant number of fat globules of selected samples is at range 1,0-3,0 mkm, that is the most favourable for consuming and processing.

Keywords: milk, fatty acid content, aromatics, Whiteheaded Ukrainian, Holstein x Whiteheaded Ukrainian half-blooded animals