

Selection indexes of dairy cattle

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By 2050, the global population is estimated to reach 9.7 billion, highlighting the critical need for progress in food production [1,2]. As the world's largest milk producer, Europe plays a significant role in meeting the growing demand for dairy products [3]. In 2021, the European Union produced an average of 161.0 million tons of raw milk, driven by milk's rich content of protein, fat, and minerals [4,5]. This demand necessitates advancements in dairy cattle breeding [6].

Selection indexes are crucial in dairy cattle breeding, evaluating multiple traits to rank animals and make informed selection decisions [7]. Different countries employ varied approaches to these indexes [8]. In Poland, the Production and Functionality (PF) index is used for evaluating traits like production, conformation, fertility, and somatic cell count. Portugal employs the M€T (total economic merit) index, focusing on milk production parameters and somatic cell counts, and the Total Performance Index (IPT) for assessing production, functional traits, and conformation. Ukraine utilizes a selection index that incorporates milk fat, protein, general type, udder, limbs, and

body format, reflecting a shift towards integrating functional traits and addressing environmental impacts.

In conclusion, selection indices are pivotal in guiding dairy farming strategies, tailored to each country's economic and environmental conditions. These indices emphasize the importance of functional traits and ecological considerations in cattle breeding, addressing the challenges posed by a growing global population and evolving consumer preferences.

Literature available from the author/s.