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Editorial

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Is livestock separate from agriculture? A scientific reconsideration

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Editorial

Although the concept of agriculture is generally known by society, the fact that livestock production is one of the fundamental components of agriculture is not sufficiently recognized by many people. The Turkish Language Association has stated that "ziraat" and "tarım/agriculture" are synonymous and defined them as "the production of plant and animal products, the enhancement of their quality and productivity, their preservation under appropriate conditions, their processing and evaluation, and their marketing; agriculture, cultivation." The term "zirai" is defined as "agricultural"; "agricultural" is defined as "related to agriculture". "Ziraat" is expressed as "agriculture," and "ziraatçı" as "farmer." "Farmer" is defined as "a person engaged in agricultural activities; agriculturist." Livestock production is explained as "the activity of caring for and raising domestic animals".[1] Agriculture has also been defined at the international level as "A narrow definition of agriculture includes cultivation of crops and animal husbandry as well as forestry, fisheries, and the development of land and water resources.; A broader definition of agriculture includes in addition agro-industries, manufacturing of agricultural inputs and machinery, regional and river development, and rural development".[2] When the "Production" section of FAO is examined, three main categories are observed: "Crops and livestock products," "Production Indices," and "Value of Agricultural Production." This classification indicates that livestock is considered an integral component of agricultural production. Indeed, plant and animal production are evaluated within the framework of production indices and the value of agricultural production; therefore, livestock is regarded as part of the broader concept of agriculture.[3]

In Article 52 of the Income Tax Law, agricultural activity is defined as the production of plants, forest products, animals, fish, and their products through sowing, planting, maintenance, production, breeding, and improvement on land and in seas, lakes, and rivers, or by directly benefiting from nature, as well as their hunting, protection by hunters and breeders, transportation, sale, or utilization of these products in any other manner. The feeding of male breeding animals for the purpose of mating and the use of all kinds of agricultural machinery and equipment belonging to farmers in the agricultural production activities of other farmers are also considered agricultural activities. In cases where sales are carried out by opening shops and stores, the stages that products undergo until they reach the shop or store are regarded as being within the scope of agricultural activity.[4]

In the scientific literature, when the concepts of agriculture are mentioned, the field that first comes to individuals' minds is plant production; moreover, it is even perceived in a narrow sense as field crop cultivation, whereas it is stated that, from a scientific perspective, the concept of "ziarat" has a much broader meaning. Agricultural activity is defined as obtaining plant and animal raw materials by using soil and seeds and transforming these raw materials into semi-finished or finished products. Crop cultivation, horticultural production, vegetable growing, floriculture, animal husbandry, agricultural technology, terrestrial and marine hunting, and forestry represent the main sub-branches of agriculture. In line with these explanations, agricultural activities are classified under three basic components: the first is plant production, which refers to the conversion of inorganic substances into organic substances by using plants; the second is animal production, which involves raising animals and animal products by using animal genetic material and benefiting from plant production in this process; and the third is agricultural arts, which refers to working on plant and animal products and transforming them into semi-processed or fully processed (manufactured) products.[5]

At this point, when the relationship between the concepts of agriculture and livestock is evaluated from a logical and mathematical perspective, it is seen that the concept of agriculture (T) can be considered a superset encompassing plant production (B), animal production (H), and agricultural arts (Z) ($T = B \cup H \cup Z$). Within this framework, livestock is defined not as an independent concept outside agriculture but as a subset of agriculture ($H \subset T$). In this case, the expression "agriculture and livestock" can be mathematically expressed as "$B \cup H \cup Z \cup H$." Therefore, the expression agriculture and livestock constitute a redundant structure from a mathematical point of view. This expression implies placing a whole and its part side by side on the same level and produces an inconsistent terminology in terms of conceptual logic.

These definitions clearly demonstrate that agricultural activity encompasses not only plant production but also animal production and other biological resource-based production fields. Nevertheless, it is observed that the expressions "tarım ve hayvancılık" and its English equivalent "agriculture and livestock" are widely used in the global literature (google scholar) today. Units established within universities, such as the "Food, Agriculture and Livestock Vocational School" and the "Agriculture and Livestock Specialization Coordination Center Directorate," institutionally reinforce the perception that livestock is an independent field separate from agriculture.[6,7] Similarly, content titled "Agriculture and Livestock in Türkiye: Problems and Solutions" on digital platforms such as YouTube, as well as the use of the expression "agriculture and livestock" by some private companies, indicates that agriculture and livestock are presented as independent fields from one another. This situation reveals that the discourse in question has been transferred from popular and commercial domains to the academic sphere and has generated a perception of conceptual.[8,9]

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The renaming of the Ministry of Agriculture and Rural Affairs in Türkiye as the "Ministry of Food, Agriculture and Livestock" and its subsequent transformation into the "Ministry of Agriculture and Forestry" contributes to the perception of livestock as a component of agriculture, while at the same time leading to the perception of forestry practices as a field separate from agriculture. This situation shows that concepts are shaped not by scientific content but by administrative and political preferences. In this context, the widespread use of the expression "agriculture and livestock" should be evaluated not as a reflection of conceptual accuracy, but as a result of historical, institutional, and political discourse. Therefore, presenting livestock as a concept separate from agriculture contradicts legal, linguistic, and scientific definitions.

As a result, when the legal, linguistic, and scientific definitions of the concept of agriculture are taken into account, it is clear that presenting livestock as an independent field separate from agriculture lacks a conceptual and logical basis. The concept of agriculture is a broader concept encompassing both plant and animal production, and livestock constitutes one of its subcomponents. Animal production represents a significant part of agricultural activities, and livestock is one of the production activities carried out within agricultural enterprises. Therefore, the expression "agriculture and livestock" contains an unnecessary repetition from a mathematical and logical perspective and weakens the holistic structure of the concept of agriculture. This situation necessitates the reconsideration of concepts in academic literature, policy documents, and institutional discourse, and the reconstruction of terminology on the basis of scientific foundations.

In this context, we propose redefining the concept of agriculture within a more comprehensive framework. We propose defining agriculture as an integrated field encompassing plant production (including forestry), animal husbandry (including aquaculture and fishing) and the agricultural arts. Therefore, agriculture should be considered an independent discipline incorporating plant and animal production, as well as the products derived from these activities. For this approach to succeed, it is essential that all parties adopt the conceptual framework with a shared understanding.

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None.

Conflicts of interest

The author declares that there is no conflicts of interest.

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