

IMPROVING THE SCIENTIFIC-METHODOLOGICAL FOUNDATIONS FOR THE
IDENTIFICATION AND CLASSIFICATION OF COMPLEX-COMPOSITION FOOD
PRODUCTS UNDER THE COMMODITY NOMENCLATURE OF FOREIGN
ECONOMIC ACTIVITY (TIF TN)

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Abstract. *This article examines the scientific and methodological problems of identifying and classifying complex-composition (multi-component) food products under the Commodity Nomenclature of Foreign Economic Activity (TIF TN), based on the Harmonized System. The expansion of the range of functional, combined and mixed-composition food products in the modern food industry creates significant methodological difficulties for their unambiguous classification during customs control. The study systematizes typical errors in current classification practice and proposes a multi-stage criteria-based model for identifying complex food products, built on the General Rules of Interpretation (GRI 1–6). The proposed model consistently evaluates composition, degree of technological processing, consumer function and commercial presentation; it was tested using milk-fat blends and functional food products as examples. The results demonstrate that the proposed approach substantially reduces ambiguity in the selection of the customs code. The article is of practical value for specialists in food technology, commodity science and customs expertise.*

Keywords: *HS classification; TIF TN; identification; complex-composition food products; Harmonized System; customs expertise; commodity science.*

1. INTRODUCTION

According to official statistical data, in 2025 Uzbekistan's foreign trade turnover in food products grew significantly: imports of grain and grain-based products amounted to \$1.06 billion (+15.2%), meat and meat products \$868.8 million (+70.6%), fats and vegetable oils \$468.7 million (+48.9%), vegetables and fruits \$467.8 million (+21.9%), and dairy products and eggs \$322.7 million (+40%). On the export side, food product exports exceeded \$3.2 billion for the first time in 2025, and the country plans to raise this figure to \$10 billion by 2030. The nomenclature of exported goods is also expanding — from 2,245 product types in 2017 to 4,359 by 2024. The rapid expansion of foreign trade turnover at this pace, and in particular the growing share of functional and multi-component products, is further intensifying the need to identify and classify them under TIF TN in an unambiguous and scientifically grounded manner.

The steady growth of foreign trade turnover and the increasing complexity of the range of food products make the issue of correctly classifying goods under the Commodity Nomenclature of Foreign Economic Activity (TIF TN) particularly urgent from both economic and legal standpoints. TIF TN is based on the World Customs Organization's Harmonized Commodity Description and Coding System (HS) and serves as the primary tool for setting customs duty rates, tariff and non-tariff regulatory measures, and the procedure for maintaining trade statistics.

For this reason, the incorrect selection of a single heading can lead not only to economic losses but also to legal liability.

Trends observed in the food industry over recent decades — the growth of functional and mixed-composition products, multi-component ready meals, and combined products made from raw materials of both plant and animal origin — show that traditional single-component classification criteria are proving insufficient in practice. Because a complex-composition product may simultaneously meet the criteria of several tariff headings, its identification and classification process requires multi-stage analysis as well as a clear methodological foundation.

The purpose of this study is to analyze the existing scientific-methodological foundations for identifying and classifying complex-composition food products under TIF TN, and to develop a criteria-based model aimed at improving them.

The objectives of the study are as follows: to critically analyze the existing approaches used in the practice of classifying complex-composition food products; to formulate a scientific definition of the concept of a "complex-composition product"; to develop a criteria-based model that clarifies the stages of the classification process; and to test the proposed model on specific product groups and assess its practical effectiveness. The object of the study is complex-composition milk-fat products and functional food products, while its subject is the methodological process of identifying and classifying them under TIF TN.

The scientific novelty of the study lies in the fact that, for the first time, the classification process for complex-composition food products is examined comprehensively by dividing it into four independent stages — compositional, technological, functional-consumer, and regulatory-legal analysis. This, in turn, makes it possible to reduce the subjectivity of expert conclusions and increase the scientific validity of classification decisions. The practical significance of the study lies in the fact that the proposed model can be used as a methodological guide in the activities of customs expertise, certification bodies, and food industry enterprises.

2. LITERATURE REVIEW

Research conducted on the theory and practice of commodity classification has mainly focused on the procedure for applying the General Rules of Interpretation of the Harmonized System (GRI 1–6), as well as on systematizing classification practice for specific product groups (dairy products, fats and oils, confectionery products, ready-made food products). At the same time, a unified methodological approach to identifying complex-composition products — that is, products combining several types of raw materials, technological processing methods, and functional characteristics — has not yet been sufficiently developed.

The main problems observed in practice are as follows: first, the criteria for determining the predominant component in a product's composition (the component giving the product its essential character) are not clearly defined; second, there is no unified methodology regarding the influence of the degree of technological processing (raw, partially processed, finished product) on classification; third, additional criteria such as the product's consumer function and commercial presentation (packaging, labeling, information about composition) are not consistently taken into account in the classification process.

These factors lead in practice to identical types of products being registered with different codes at different customs posts, which negatively affects the reliability of statistical data and the uniformity of tariff policy.

In this regard, developing a scientifically grounded, consistent, and verifiable methodology for identifying and classifying complex-composition food products, based on a system of criteria, is a pressing scientific and practical task.

In international practice, issues of commodity classification are regularly consolidated within the framework of the World Customs Organization, and corresponding amendments are made to the Explanatory Notes of the Harmonized System; however, these amendments are often formed on a case-by-case basis and remain unconsolidated into a unified methodological system.

Within the Eurasian Economic Union, there are also clarifications on maintaining the commodity nomenclature, which mainly consist of precedent-based decisions on specific tariff headings. At the national level, full harmonization between the criteria for assessing food products' compliance with technical regulations and customs classification criteria has not been achieved, which creates additional methodological ambiguities for practitioners.

In addition, the methodological connection between commodity science, which studies the technological characteristics of food products, and customs-legal classification practice has not been sufficiently researched. Although commodity science examines a product's composition, structure, and consumer properties in detail, there is virtually no established methodology in practice for consistently "translating" this data into customs classification criteria. It is precisely this gap that constitutes the main cause of contradictions in identifying complex-composition products.

3. MATERIALS AND METHODS

The methodological basis of the study consists of systemic analysis, comparative-legal analysis, and expert assessment methods. The TIF TN Explanatory Notes, the General Rules of Interpretation (GRI 1–6), as well as national and international regulatory-technical documents relating to food products (state standards, technical regulations, principles of the Food Code) were used as sources for analysis.

To conduct a practical test of the proposed criteria-based model, two product groups were selected: (1) milk-fat blends containing milk fat and vegetable oil in various proportions (spreads, blended fats), and (2) functional food products containing additional functional components (vitamin-mineral complexes, probiotic cultures, plant extracts) added to their composition. For each sample, a step-by-step analysis was conducted according to the proposed criteria based on data on the composition ratio, technological processing scheme, and commercial presentation, and the result was compared with current classification practice.

4. RESULTS AND DISCUSSION

4.1. Main methodological problems in classifying complex-composition products

The analysis conducted showed that the main difficulty in classifying complex-composition products lies in the fact that they simultaneously correspond to the description of several tariff headings.

In such cases, in accordance with GRI Rule 3, classification is required based on the component or material giving the product its "essential character"; however, in practice, objective criteria for determining the concept of "essential character" have not been sufficiently formulated.

As a result, a product with identical composition may be interpreted differently by different experts.

4.2. Analysis of the concept of "complex-composition product" within the TIF TN system

Within the scope of the study, the following definition is proposed for the concept of "complex-composition food product": a finished or semi-finished product containing two or more types of raw materials or food components, which, as a result of their ratio and degree of technological processing, acquires new consumer properties. This definition substantiates the need to take into account not only compositional but also technological and functional aspects when classifying a product.

4.3. Proposed model for improving the system of identification criteria

As a result of the study, a four-stage criteria-based model was developed for identifying complex-composition food products:

First stage — compositional analysis: the quantitative (percentage) ratio of all components in the product's composition is determined, along with the tariff heading to which each component would separately belong.

Second stage — technological analysis: the processing methods applied to the product (mixing, emulsification, fermentation, drying, etc.) and their degree of influence on the product's properties are assessed.

Third stage — functional-consumer analysis: the purpose for which the product is used by the consumer (as an independent product, raw material, or ingredient) is determined, along with its consistency with the product's market presentation.

Fourth stage — regulatory-legal adaptation: the results of the above three stages are compared with the GRI 1–6 rules and the relevant Explanatory Notes, and the final commodity code is selected.

Unlike existing practice, the proposed model divides the classification process into consistent and verifiable stages, serving to reduce the subjectivity of expert conclusions.

4.4. Results of testing the model

The test conducted on milk-fat blends showed that, when the proposed four-stage model was applied, blends with a milk fat share below 50% were consistently and reproducibly classified under headings belonging to the "fats and oils" group, while those with a higher share were classified under headings belonging to the "dairy products" group. In the case of functional products, classification was carried out based on the share of the added functional component in the overall composition and the criterion of whether it gives the product a "new essential character."

The results obtained confirmed that the proposed criteria-based model can be applied in the practical expert assessment process and has the potential to reduce contradictions among classification decisions.

5. CONCLUSIONS

As a result of the study conducted, the following conclusions were reached:

— in classifying complex-composition food products under TIF TN, existing practice relies mainly on compositional analysis, but technological and functional aspects are not sufficiently taken into account;

— providing a scientifically grounded definition of the concept of "complex-composition food product" helps clarify its identification criteria;

— the four-stage criteria-based model, encompassing the stages of compositional, technological, functional-consumer, and regulatory-legal analysis, makes the process of classifying complex-composition products more consistent and increases the objectivity of expert conclusions.

In future research, it would be a promising direction to apply the proposed model to other groups of food products (for example, ready meals, confectionery products), as well as to formalize it in the form of automated expert systems (software tools). From a practical standpoint, it is recommended to introduce the proposed system of criteria as a methodological guide in the activities of customs expertise and certification bodies.

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