

IDENTIFICATION OF COMPLEX-COMPOSITION FOOD PRODUCTS UNDER THE COMMODITY NOMENCLATURE OF FOREIGN ECONOMIC ACTIVITY (TIF TN)**Tosheva Durdona Omon kizi**

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Abstract. *Correctly recognising the true nature of a food item before it is assigned a customs code is a step that customs practice frequently underrates, yet errors made at this stage cascade into every downstream decision on duty rates and trade statistics. This paper focuses specifically on how multi-ingredient food products — seasoning and spice blends, ready-to-cook meal kits, and snack items combining several base materials — can be reliably recognised prior to their assignment under the Commodity Nomenclature of Foreign Economic Activity (TIF TN).*

Rather than treating identification as a formality resolved by reading a label, the study builds a recognition framework around three layers of evidence: sensory inspection, quantitative compositional testing, and structural examination of raw material residues. The framework was applied to two sample sets — mixed seasoning blends and composite snack bars — and compared against outcomes obtained from label review alone. The comparison revealed that reliance on declared information without supporting verification left a substantial share of samples with an uncertain or contestable determination, whereas the layered framework consistently produced a defensible conclusion. The paper argues that customs and certification bodies dealing with composite food items should treat recognition as a distinct verification stage rather than folding it into classification itself.

Keywords: *commodity identification, composite food products, TIF TN, seasoning blends, compositional verification, customs practice.*

1. Introduction

Every customs code assigned to a food shipment rests on a prior, often unspoken, judgement about what the product actually is. When that judgement is made carelessly — accepting a supplier's description at face value, or relying on a quick visual check — the resulting code may be defensible on paper while being wrong in substance. This gap between declared identity and actual composition is rarely a problem for single-ingredient goods, where the product largely speaks for itself. It becomes a genuine difficulty once a food item combines several raw materials, additives, or processing stages into a single commercial unit.

Seasoning and spice blends, dry meal kits, and multi-layer snack products are representative of this difficulty. Their sensory profile is engineered precisely so that the finished item tastes and looks coherent, regardless of which base ingredients were actually used to achieve that profile. A blend built around salt and cheap filler can be flavoured to resemble one built around genuine dried herbs; a snack bar bound with a starch syrup can visually pass for one bound with fruit concentrate.

Under such conditions, an inspector who relies solely on appearance, aroma, or the exporter's paperwork has no reliable means of confirming what the product is before deciding what code it should carry.

This paper sets out to address that gap directly. Its purpose is to propose and test a recognition framework — distinct from, and prior to, the classification decision itself — that customs officers and commodity examiners can apply to composite food products of this kind, and to demonstrate its practical value using two representative product groups.

2. Related Work

Commodity science has long distinguished between identification and classification as separate analytical tasks, even though customs practice frequently collapses the two into a single step. Identification, in its narrow sense, concerns whether a given sample matches its declared description; classification concerns which nomenclature position that description belongs to. For single-component agricultural goods this distinction rarely matters in practice, since visual and documentary checks are usually sufficient to confirm identity.

For composite food products, however, the literature on food authenticity testing has shown repeatedly that sensory and documentary checks alone cannot reliably detect partial substitution of ingredients, particularly when the substitute is chosen specifically to mimic the sensory properties of the genuine component. Analytical techniques developed for food fraud detection — including compositional profiling and microscopic residue analysis — are well established in food science but are only inconsistently carried over into customs and trade-facilitation practice, where documentary review still tends to dominate.

This creates a methodological gap: the tools needed to identify composite food products reliably already exist in adjacent disciplines, but they have not been organised into a stepwise procedure suited to the pace and constraints of customs and certification work. Addressing that gap is the specific contribution this paper attempts to make.

3. Materials and Methods

The study combined a review of applicable regulatory guidance with an empirical comparison of two verification approaches on real product samples. Two product groups were selected for testing: (a) commercial dry seasoning and spice blends containing at least three declared components, and (b) composite snack bars combining a cereal base with a binding agent and a flavour component. For each sample, the declared composition from accompanying documentation and labelling was first recorded, followed by an independent determination using sensory evaluation, targeted compositional testing, and, where warranted, microscopic examination of the raw material fraction. The two outcomes — declared versus independently determined — were then compared to establish how often documentary review alone would have led to an unsupported or incorrect determination.

4. Results and Discussion

4.1. A three-layer recognition framework

Analysis of the sample sets supported organising the identification task into three layers rather than treating it as a single check. The first layer, sensory and documentary screening, establishes whether the sample is broadly consistent with its declared description and flags cases warranting further scrutiny. The second layer, compositional verification, applies targeted quantitative testing to confirm the presence, absence, or proportion of specific components that the sensory layer cannot distinguish reliably — for instance, distinguishing a genuine spice fraction from a flavour-matched filler. The third layer, structural examination, uses microscopic inspection of raw material residues to confirm the botanical or material origin of a component when compositional testing alone leaves ambiguity, such as when two plant sources yield a similar chemical profile.

4.2. Stepwise recognition procedure

Building on the three layers, a stepwise procedure was formalised for practical use. A sample first undergoes sensory and documentary screening; if the result is unambiguous and consistent with the declared description, the recognition step concludes there. If any

inconsistency or reasonable doubt arises, the sample proceeds to compositional verification, where the specific component in question is tested quantitatively. Only if compositional results remain inconclusive does the procedure move to structural examination. This staged design keeps routine, low-risk samples moving quickly through documentary and sensory checks while reserving laboratory-intensive testing for cases that genuinely require it.

4.3. Application to seasoning blends and snack bars

Applied to the seasoning blend samples, sensory screening alone proved unable to detect several instances where a portion of the declared herb content had been substituted with a flavour-matched filler; compositional verification at the second layer identified these cases consistently. Applied to the composite snack bars, the binding agent's true source — whether a starch-based syrup or a fruit-based concentrate — could not be established from appearance or documentation in a meaningful share of samples, but was resolved reliably through targeted compositional testing, with structural examination needed in only a small residual number of cases. Across both product groups, documentary and sensory review alone left roughly one in three samples with an unresolved or disputable determination, while the staged framework resolved every sample to an unambiguous conclusion.

5. Conclusion

The findings indicate that composite food products cannot be reliably recognised through documentary and sensory review alone, regardless of how detailed the accompanying paperwork appears. A staged recognition framework — sensory and documentary screening, followed where necessary by compositional verification and, in residual cases, structural examination — offers a practical route to a defensible determination without subjecting every sample to full laboratory analysis. Adopting recognition as a distinct, formalised stage ahead of classification would allow customs laboratories, certification bodies, and food manufacturers to reduce the share of contestable determinations that currently arise from composite products. Extending the framework to other composite product categories, and formalising decision thresholds for each layer, are natural directions for further work.

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