Ethiopian International Journal of Multidisciplinary Research

pISSN:2349-5707 Volume:13,Issue 2, February -2026 eISSN:2349-5715

STRUCTURAL–SEMANTIC AND COMPARATIVE ANALYSIS OF TERMINOLOGICAL PHRASES IN THE AGRICULTURAL SUBLANGUAGE OF ENGLISH AND UZBEK

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ABSTRACT: Agriculture relies on a specialized sublanguage in which knowledge is encoded through stable terminological phrases (multiword terms) such as soil moisture content or tomchilatib sug‘orish tizimi “drip irrigation system.” This article compares how English and Uzbek build agricultural terminological phrases and how structural choices interact with meaning and translation equivalence. Using a pilot, genre-balanced list of term phrases from agronomy, irrigation, plant protection, and livestock management texts, the study classifies phrases by structural models (e.g., N+N compounding, Adj+N, N+Prep+N) and by semantic relations (taxonomic, part–whole, attribute, purpose, process–result). The comparison indicates that English favors dense right-headed noun compounds and modifier stacking, whereas Uzbek more often realizes the same concepts through head-final possessive constructions, genitive–possessive frames, and participial or deverbal modifiers. These typological differences trigger recurring translation shifts: unpacking English compounding into analytic Uzbek phrases, or compressing Uzbek relational structures into conventional English compounds. The paper concludes with practical recommendations for bilingual terminography and translation: explicit head identification, relation-aware paraphrasing, and controlled variant management improve consistency across glossaries and teaching materials.

Keywords: agricultural sublanguage, multiword terms, terminological phrases, English–Uzbek comparison; compounding, genitive–possessive construction, semantic relations, terminography

Professional domains develop language varieties that prioritize conceptual precision and conventional naming. The agricultural sublanguage is especially rich in multiword terms because it must label processes (irrigation scheduling), objects (harvesting equipment), parameters (water use efficiency), and integrated practices (integrated pest management). In both English and Uzbek, a large share of domain vocabulary is realized as terminological phrases: combinations that function as single naming units, show limited variability, and map onto a concept system. For translators and lexicographers, the main difficulty is not simply “finding a word,” but recovering the internal organization of a phrase: the head (the core concept) and the semantic relations contributed by modifiers. This is crucial because English and Uzbek package relations differently. English can compress relations into noun compounds (soil fertility management), while Uzbek commonly expresses relations through possessive morphology and case marking (tuproq unumdorligini boshqarish). A systematic comparison helps prevent uncontrolled variants in bilingual lists, improves equivalence decisions, and supports clearer teaching explanations.

Terminological phrases (multiword terms) differ from idioms: their meaning is mostly compositional, yet their form becomes conventional within a domain. Terminology theory treats terms as concept-oriented units: the preferred form should be consistent, transparent, and aligned with a conceptual hierarchy. In LSP research, multiword terms are also described as recurrent noun phrases with high “termhood,” i.e., strong association with a domain and predictable collocational behavior. Two complementary analytic perspectives guide this study. Structural modeling identifies recurrent templates (e.g., N+N, Adj+N, N+Prep+N) and highlights head location. Semantic-relation modeling labels how components are linked (attribute-of, target-of, part-of, result-of, purpose-of). Relation labeling is particularly helpful for English compounds,

pISSN:2349-5707 Volume:13,Issue 2, February -2026 eISSN:2349-5715

where the relation is often implicit and can be interpreted in more than one way without context. The analysis uses a pilot set of 120 agricultural terminological phrases (60 English, 60 Uzbek) gathered from accessible educational and informational texts across four clusters: (i) soil and water, (ii) crops and cultivation, (iii) plant health, and (iv) livestock management. The dataset is intended to be representative rather than exhaustive.

Each phrase was annotated for: (a) structural model in its language, (b) head element, (c) semantic relation(s) between components, and (d) correspondence type in translation (calque, structural shift, descriptive rendering, or compression). English structural tags include N+N, Adj+N, Adj+N+N, N+Prep+N, and N+N+N (noun strings). Uzbek tags include Adj+N, N+N(POSS), Nning N(POSS), Participle+N, and N+deverbal nominal patterns. The approach is qualitative; small illustrative counts are used only to support generalizations. To increase reliability, borderline cases (free noun phrases vs. established terms) were checked through recurrence and definitional use in their immediate context. The dominant English pattern is nominal compounding, especially N+N with a right-headed structure: the final noun is the head (fertility, management, system) and the preceding noun specifies type, domain, target, or material (soil fertility, pest management, irrigation system). Agriculture also uses longer noun strings (N+N+N), which compress complex concepts but can be semantically under-specified (soil water balance, greenhouse gas emissions). A second frequent model is Adj+N (organic farming, sustainable irrigation) and its extension Adj+N+N (integrated pest management). English furthermore employs N+Prep+N to make relations explicit when needed (resistance to disease; management of nutrients), and V-ing+N where activity/function is foregrounded (planting material; harvesting machinery). A key implication is interpretive ambiguity: the same N+N structure can encode different relations (water quality may be “quality of water,” while water management is “management of water”). In bilingual work, ambiguity should be resolved through head-based paraphrasing (“X of Y,” “X for Y,” “X against Y”) before choosing an Uzbek form.

Uzbek agricultural term phrases are typically head-final and rely heavily on possessive morphology. One central model is N+N(POSS), where the head noun takes possessive marking and the preceding noun functions as a reduced possessor/attributive: tuproq namligi “soil moisture,” suv samaradorligi “water efficiency,” o‘simlik chidamliligi “plant resistance.” A more explicit alternative is the genitive–possessive frame Nning N(POSS): tuproqning unumdorligi “fertility of soil,” o‘simlikning kasalliklarga chidamliligi “plant’s resistance to diseases.” Uzbek also uses Adj+N for classificatory attributes (organik dehqonchilik “organic farming”; aniq dehqonchilik “precision agriculture”) and participial/deverbal modifiers to encode processes and functions (sug‘oriladigan yerlar “irrigated lands,” hosildan keyingi yo‘qotishlar “post-harvest losses,” suvdan foydalanish samaradorligi “efficiency of using water”). Compared with English, Uzbek often makes relations more explicit via case markers (-dan, -ga, -ni) and verbal nouns (-ish), especially when multiple modifiers would otherwise create opacity.

Mini-corpus examples: structure and relation

The sample below illustrates how the same concepts are packaged differently and how semantic relations guide translation choices.

No.	English term phrase (model)	Uzbek equivalent (model)	Relation (simplified)
1	soil moisture content	tuproq namligi miqdori (N+N(POSS)+N)	attribute-of

pISSN:2349-5707 Volume:13,Issue 2, February -2026 eISSN:2349-5715

No.	English term phrase (model)	Uzbek equivalent (model)	Relation (simplified)
	(N+N+N)		
2	crop rotation (N+N)	ekin almashinuvi (N+N(deriv))	process
3	seed germination rate (N+N+N)	urug‘ unish darajasi (N+V.N+N)	parameter-of
4	drip irrigation system (N+N+N)	tomchilatib sug‘orish tizimi (V.Adv+V.N+N)	means/system
5	integrated pest management (Adj+N+N)	integratsiyalashgan zararkunandalarni boshqarish (Adj+N+V.N)	activity–target
6	soil fertility management (N+N+N)	tuproq unumdorligini boshqarish (N+N(POSS)+V.N)	management-of
7	plant disease resistance (N+N+N)	o‘simlikning kasalliklarga chidamliligi (Nning N+Dat+N(POSS))	resistance-to
8	water use efficiency (N+N+N)	suvdan foydalanish samaradorligi (Abl+V.N+N(POSS))	efficiency-of
9	livestock feed ration (N+N+N)	chorva ozuqa ratsioni (N+N+N(POSS))	composition/standard
10	post-harvest losses (Adj+N)	hosildan keyingi yo‘qotishlar (Abl+Adj+N)	time/phase
11	greenhouse gas emissions (N+N+N)	issiqxona gazlari emissiyasi (N+N(pl)+N(POSS))	type/source
12	precision agriculture technologies (Adj+N+N)	aniq dehqonchilik texnologiyalari (Adj+N+N(pl))	domain/type

Two comparative observations emerge. First, English frequently leaves the relation implicit inside compounds, whereas Uzbek often signals relations morphologically (e.g., suvdan foydalanish “use of water”). Second, head identification is stable but uses different cues: English heads are typically rightmost; Uzbek heads are final and often carry possessive morphology (-i/-si), which helps readers recognize the terminological “core.” The contrast between English compaction and Uzbek relation-marking yields recurrent translation shifts. Structural expansion is common when an English noun string would be ambiguous in Uzbek: water quality monitoring may become suv sifatini monitoring qilish or suv sifati monitoringi depending on institutional style. Structural compression also occurs: Uzbek genitive–possessive phrases can be rendered as conventional English compounds when widely established (ekinlarning hosildorligi → crop yield; suv resurslarini boshqarish → water resource management).

A third tendency is mixed calque plus adaptation. Uzbek may borrow international modifiers (integratsiyalashgan) while selecting a conventional Uzbek head (dehqonchilik, boshqarish)

pISSN:2349-5707 Volume:13,Issue 2, February -2026 eISSN:2349-5715

rather than a full borrowing. Finally, variant management is essential: Uzbek often permits both an explicit genitive frame and a reduced attributive (tuproqning namligi vs tuproq namligi). For terminography, recording a preferred form plus controlled variants—and noting where each is acceptable (tables, headlines, explanatory prose)—reduces inconsistency across materials. A practical workflow for translators and dictionary compilers is: (1) identify the head, (2) paraphrase the relation explicitly, and (3) choose the Uzbek model (N+N(POSS), Nning N(POSS), participial/deverbal) that matches both relation and domain convention. Adding a simple relation label (attribute-of, target-of, purpose-of) in term entries can further improve bilingual consistency.

CONCLUSION

Agricultural terminology in English and Uzbek is largely multiword and structurally systematic. English preferentially uses compact noun compounding and modifier stacking, while Uzbek typically encodes relations through possessive morphology, genitive frames, and participial or deverbal modifiers. Because semantic relations are frequently implicit in English compounds, reliable translation into Uzbek often requires relation-aware expansion and controlled choice among Uzbek relational constructions. For bilingual glossaries, teaching materials, and professional translation, the most effective practices are explicit head identification, relation-based paraphrasing, and documented variant control. Enlarging the pilot dataset and aligning term phrases with a concept hierarchy would be a productive next step toward robust English–Uzbek agricultural terminography.

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