

Lexicographic Principles of Describing Animal Husbandry Terminology in Russian and Uzbek

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ABSTRACT

Specialized bilingual dictionaries become unreliable when they present technical terms as isolated translation pairs. This problem is visible in Russian and Uzbek animal husbandry terminology, where similar designations may occupy different levels of a concept hierarchy, apply to different species, or belong to different professional registers. The study formulates lexicographic principles for a Russian-Uzbek resource. A pilot inventory of 64 concept groups was compiled from Russian and Uzbek explanatory and agricultural dictionaries and checked selectively against terminological standards, agricultural knowledge resources, and language corpora. The material was analysed through concept modelling, componential comparison, equivalence assessment, and microstructural design. Four recurrent correspondence types were identified: direct conventional equivalents (45.3%), internationalisms (15.6%), analytic equivalents (18.8%), and context-sensitive or partial equivalents (20.3%). On this basis, the article proposes a bidirectional, concept-oriented entry containing preferred terms, grammatical data, subject labels, an intensional definition, equivalence status, variants, collocations, usage restrictions, concept relations, examples, and source provenance. The findings show that reliable description requires more than translation: it must preserve taxonomic level, species reference, process parameters, and culturally specific distinctions. The proposed model can support a printed dictionary, an electronic termbase, or a multilingual agricultural knowledge system.

Keywords: Animal husbandry terminology; Russian; Uzbek; specialized lexicography; bilingual dictionary; terminography; equivalence; concept system.

1. INTRODUCTION

Animal husbandry is both a modern scientific field and a long-established sphere of everyday knowledge. Its vocabulary names species and breeds, reproductive processes, feeding regimes, housing systems, productivity indicators, diseases, occupations, tools, and products. In Russian and Uzbek, this terminological layer has developed under different linguistic and socio-economic conditions. Russian possesses a large standardized agricultural vocabulary associated with research institutions, industrial production, veterinary regulation, and technical documentation. Uzbek combines an equally important scientific layer with a rich stock of traditional names shaped by pastoral practice, local classification, and the productive word-formation resources of a Turkic language. The two systems therefore overlap without being structurally identical.

This asymmetry creates a practical lexicographic problem. A bilingual dictionary may offer a formally plausible equivalent while concealing a difference in scope. For example, Russian *животноводство* and Uzbek *chorvachilik* function as broad designations for livestock production, whereas Russian *скотоводство* commonly denotes cattle breeding in professional classification and is more accurately matched by Uzbek *qoramolchilik*. If both Russian headwords are translated only as *chorvachilik*, the hierarchy between a general branch and one of its subbranches disappears. Similar difficulties arise with species-specific reproductive terms, measurement terms whose meaning depends on a time period or reference animal, and Uzbek traditional designations that require explanation rather than a single Russian substitute.

Terminological work is concerned with the systematic collection, description, processing, and presentation of concepts and their designations [9]. Consequently, the unit of a specialized bilingual dictionary should not be an isolated word but a concept

represented by terms in two languages. ISO 704 further emphasizes concept relations, definitions, designations, equivalence, synonymy, and harmonization as interconnected parts of terminology work [8]. These principles are especially relevant to animal husbandry, because its vocabulary forms visible taxonomies: “animal husbandry” includes cattle breeding, sheep breeding, horse breeding, poultry farming, and other branches; reproduction includes mating, insemination, pregnancy, parturition, and offspring; feeding includes feed classes, rations, preservation methods, and nutritional measures.

Previous research by Kurbanova compared the structural and semantic characteristics of Russian and Uzbek livestock terms and showed that full lexical correspondence coexists with culturally and functionally conditioned differences [10]. The present article moves from comparative description to dictionary architecture. Its purpose is to determine how Russian and Uzbek animal husbandry concepts should be selected, organized, defined, connected, and illustrated in a specialized bilingual resource. Three questions guide the analysis: (1) which kinds of cross-language correspondence recur in a representative pilot set; (2) which data fields are required to prevent false equivalence; and (3) how can a dictionary remain norm-oriented without excluding professionally relevant variants and traditional terminology?

2. LITERATURE REVIEW AND METHODOLOGY

2.1. *Theoretical basis*

Modern specialized lexicography brings together terminology, lexical semantics, corpus evidence, and dictionary-use research. Danilenko’s systemic description of Russian terminology established an important foundation for analysing terms within organized fields rather than as an accidental word list [4]. Cabré treats terms as units that simultaneously belong to language, specialized knowledge, and professional communication [3]. L’Homme likewise argues that a term cannot be reduced to a neutral label: it has semantic relations, combinatorial behaviour, morphological properties, and contextual variation that must be

represented in terminological resources [11]. This linguistic dimension is essential in a Russian-Uzbek dictionary, since the two languages package specialized meanings through different grammatical and derivational patterns.

Practical lexicography begins with the intended users and the situations in which they consult a dictionary. Atkins and Rundell connect dictionary design with corpus evidence, entry planning, sense discrimination, and the needs of real users [1]. Bergenholtz and Tarp apply this functional orientation specifically to specialized dictionaries, which may support text reception, text production, translation, or knowledge acquisition [2]. A livestock specialist reading a regulation, a translator preparing an Uzbek version of a Russian manual, and a student learning zootechnical concepts do not need exactly the same amount of information. A useful bilingual resource should therefore offer a concise core entry with optional layers of definition, examples, relations, and technical notes.

Uzbek terminology studies also stress regulation, consistent selection, and the controlled treatment of variants. Hojiyev and Zinin formulated principles for ordering Uzbek scientific and technical terminology [7], while Madvaliyev examined the relation between terms, terminological dictionaries, and explanatory lexicography [12]. Dadaboyev's historical and structural account demonstrates that Uzbek terminology develops through native formation, semantic specialization, and borrowing [5]. These processes are all visible in livestock vocabulary: *qo'ychilik*, *tuyachilik*, and *yilqichilik* use productive native patterns; *seleksiya*, *laktatsiya*, and *brutsellyoz* represent international scientific nomenclature; and multiword units such as *sun'iyurug'lantirish* encode complex concepts analytically.

The study adopts two international reference points. ISO 1087 supplies the basic vocabulary of terminology work [9], and ISO 704 provides principles for concept analysis, definition writing, designation formation, and equivalence [8]. The AGROVOC editorial guidelines add practical recommendations for multilingual concept management, including preferred and alternative labels, definitions, spelling, and consistent editorial decisions [6]. AGROVOC is not treated as a ready-made

Russian-Uzbek dictionary; its value here is methodological. Its concept-based architecture and semantic relations demonstrate how agricultural terminology can be made interoperable. The Russian version has been developed with specialist institutional participation, and FAO reported approximately 36,000 preferred and 8,000 alternative Russian terms in 2022 [6].

2.2. *Materials and procedure*

The pilot inventory contains 64 concept groups divided equally among four areas: (1) branches of animal husbandry and classes of animals; (2) breeding and reproduction; (3) feeding and housing; and (4) productivity, measurement, and animal health. Russian designations were selected primarily from the *Agricultural Encyclopedic Dictionary* edited by Mesyats [14] and checked against contemporary usage in the Russian National Corpus [16] where suitable contexts were available. Uzbek designations were checked against the six-volume *Explanatory Dictionary of the Uzbek Language* [13], specialist terminology studies [5, 12], and contexts accessible through the Uzbek National Corpus [17]. The corpora were used selectively to examine collocation and contextual restriction, not to produce population-level frequency claims.

The analysis proceeded in five stages. First, each Russian and Uzbek designation was assigned to a concept rather than paired solely by surface meaning. Second, the concept was placed within a thematic hierarchy and distinguished from its broader, narrower, or related concepts. Third, definitions were compared through semantic components such as animal species, sex, age, process, purpose, result, and measurement condition. Fourth, the Russian-Uzbek relationship was assigned to one primary category: direct conventional equivalence, shared or parallel internationalism, analytic equivalence, or context-sensitive/partial equivalence. Finally, recurrent problems were converted into requirements for dictionary macrostructure and microstructure.

The classification is functional rather than etymologically absolute. A term containing an international root may also have a native affix, and a conventional equivalent may still require a

usage note. Each pair was therefore placed in the category that best predicts the lexicographic treatment needed by a user. The pilot set is intended to test an entry model; it is not presented as a complete inventory of Russian and Uzbek animal husbandry terminology.

3. RESULTS

3.1. *A concept-oriented macrostructure*

The first result is that alphabetical order alone is insufficient. The primary macrostructure should be a concept system, while two alphabetical indexes provide access from Russian and Uzbek. A practical hierarchy may begin with five domains: animal groups and production branches; breeding and reproduction; feeding and housing; productivity and product quality; and veterinary, economic, and management terminology. Within each domain, relations should be encoded explicitly. Thus, *животноводство* / *chorvachilik* is the broader concept for *скотоводство* / *qoramolchilik*, *овцеводство* / *qo'ychilik*, *коневодство* / *yilqichilik*, and *птицеводство* / *parrandachilik*. A user who enters through any of these terms should be able to see the neighbouring concepts rather than only one translation.

This combined structure solves two different access problems. The thematic system helps users understand knowledge relations and identify missing concepts; the alphabetical indexes support rapid lookup. Digital implementation should additionally permit filtering by species, production purpose, process type, usage status, and source. A stable concept identifier should remain unchanged even when a preferred term or definition is revised.

3.2. *Patterns of Russian-Uzbek correspondence*

The 64 concept groups did not support a uniform word-for-word model. As shown in Table 1, fewer than half could be handled as direct conventional equivalents without a substantial explanatory note. The remaining entries required either recognition of international terminology, an analytic Uzbek or Russian expression, or an explicit statement of contextual limits.

Table 1. *Primary equivalence patterns in the 64-concept pilot inventory*

Equivalence pattern	Number	Share	Required treatment
Direct conventional equivalent	29	45.3%	Preferred terms plus a concise definition and relations
Shared/parallel internationalism	10	15.6%	Standard spelling, grammatical adaptation, and native synonym where established
Analytic equivalent	12	18.8%	Multiword designation or descriptive formulation; no forced one-word match
Context-sensitive or partial equivalent	13	20.3%	Scope note, species label, usage restriction, or differentiated senses
Total	64	100%	Concept-based entry with explicit equivalence status

Direct equivalents include systematic branch names such as *овцеводство/qo'ychilik* and productive measures such as *живая масса/tirik vazn*. Internationalisms include *селекция / seleksiya*, *лактация/laktatsiya*, and *бруцеллёз/brutsellyoz*. Their similarity reduces translation difficulty but does not remove the need for language-specific spelling and grammatical information. Analytic equivalents arise when one language lexicalizes a distinction that the other normally expresses as a phrase, as in *стойловое содержание/og'ildaboqish*. Context-sensitive correspondences are the most dangerous because a short translation may appear correct. Representative cases are listed in Table 2.

Table 2. *Representative Russian-Uzbek term pairs and lexicographic decisions*

Russian designation	Uzbek designation	Concept area	Equivalence	Essential lexicographic note
животноводство	chorvachilik	branch	direct	Broad field covering the breeding and use of farm animals
скотоводство	qoramolchilik	branch	partial	In professional classification, usually cattle breeding; do not merge automatically with broad <i>chorvachilik</i>
овцеводство	qo'ychilik	branch	direct	Sheep production as a subbranch of animal husbandry

шелководство	pillachilik; ipak qurti yetishtirish	branch	partial	Distinguish silkworm rearing from the wider silk-production chain
звероводство	mo'ynalihayv onlamiko'payt irish	branch	analytic	Definition must specify the farming of fur-bearing animals
порода	zot	breeding	direct	Record species, breed standard, and related terms
чистопородное разведение	sof zotli urchitish	breeding	analytic	Breeding within one recognized breed; distinguish from crossing
селекция	seleksiya	breeding	international	Give the native explanatory equivalent <i>tanlab naslchilik</i> where appropriate
случка	juftlashtirish; qochirish	reproduction	partial	Mark <i>qochirish</i> as a professional/traditional variant and identify the species context
отёл	buzoqlash	reproduction	direct	Parturition of cattle; not a generic equivalent for all animal birth
окот	qo'zilash; uloqlash	reproduction	partial	Select the Uzbek term according to sheep or goat reference
приплод	yangitug'ilgan nasl	reproduction	analytic	Usually collective offspring produced during a stated period
комбикорм	omuxta yem; kombikorm	feeding	partial	Prefer the standardized native expression where institutional usage supports it; retain the borrowing as a searchable variant
стойловое содержание	og'ildaboqish	housing	analytic	Housing/management system rather than the physical stall alone
удой	sutsog'imi	productivity	partial	State whether the value is per milking, day, lactation, or animal
среднесуточный прирост	o'rtachasutkali kvaznortishi	measurement	analytic	Definition must identify the measured live-weight change and time interval

3.3. *Required entry microstructure*

The comparison led to a twelve-field core entry. Not every field must be displayed in the same visual layer, but all should be available in the underlying database:

1. a permanent concept identifier and subject-field code;
2. the preferred Russian term with stress, part of speech, gender, and necessary inflectional information;
3. accepted Russian variants, abbreviations, and deprecated forms;
4. the preferred Uzbek term in the Latin alphabet, with a Cyrillic cross-script form when it is needed for legacy sources;
5. accepted Uzbek variants and their status;
6. a language-neutral intensional definition based on the nearest broader concept and the delimiting characteristic;
7. the Russian-Uzbek equivalence category;
8. broader, narrower, and related concepts;
9. typical collocations and governed complements;
10. one authentic or carefully edited example in each language;
11. usage labels, including scientific, official, professional, traditional, dialectal, historical, or deprecated;
12. documentary source, corpus evidence, expert validator, and revision date.

The definition field is central. A translation must not substitute for a definition because two labels can seem parallel while encoding different characteristic structures. Definitions should be concise, non-circular, and coordinated across languages. They should start with the nearest broader concept and then state the characteristic that distinguishes the entry. For example, *омён/ buzoqlash* can be defined as “parturition in cattle that results in the birth of a calf.” This wording distinguishes the concept from the generic process of birth and from species-specific processes designated by *окот*, *опорос*, or *жеребение* in Russian.

Table 3. *Model bilingual concept record*

Field	Recommended content
Concept ID / domain	AH-REP-014 / cattle breeding > reproduction
Russian preferred term	отёл, m.; gen. отёла; stress: отёл
Uzbek preferred term	buzoqlash
Definition	Parturition in cattle resulting in the birth of a calf
Equivalence status	Direct within the cattle domain; species-restricted
Typical combinations	лёгкий отёл; сезон отёлов / oson buzoqlash; buzoqlash mavsumi
Related concepts	искусственное осеменение / sun'iyurug'lantirish; стельность / bo'g'ozlik; телёнок / buzoq
Usage note	Do not use as the general designation for the birth of sheep, goats, pigs, or horses
Sources and validation	Dictionary source, attested context, livestock-specialist review, revision date

3.4. *Language-specific description*

Parallel entries should not force identical grammatical fields on two different languages. For Russian nouns, stress, grammatical gender, genitive form, number restrictions, and adjective government can prevent errors in text production. Multiword terms should identify the grammatical head and common inflectional pattern. For process verbs, aspectual pairs may be relevant. Collocations such as *племенной скот*, *ремонтный молодняк*, *суточный привес*, and *сезон отёлов* reveal relations that a bare equivalent cannot show.

Uzbek entries require a different profile. The Latin-script form should be primary in a contemporary dictionary, but Cyrillic forms should remain searchable because a substantial body of agricultural literature and earlier dictionaries uses Cyrillic. Productive derivation should be shown where it helps users recognize the system: the suffix *-chilik* creates branch names (*qo'ychilik*, *tuyachilik*, *parrandachilik*); *-dor* participates in quality and possession terms such as *nasldor*; and *-lash* forms process nouns or verbs in items such as *buzoqlash* and *duragaylash*. Multiword Uzbek terms should be stored as full

lexical units rather than generated mechanically from separate components.

Variant management must distinguish synonymy from competition between standards, borrowings, and professional speech. The pair *omuxta yem* / *kombikorm* illustrates why deleting a widely recognized borrowing is unhelpful, while presenting both forms without labels is equally problematic. The dictionary should identify a preferred form for formal production, retain other attested forms as access points, and explain differences in register or institutional acceptance. Traditional terms should be preserved when they denote a useful distinction; a descriptive Russian equivalent and a cultural note are preferable to erasing the distinction through an overly general translation.

3.5. *Evidence and digital presentation*

Dictionary examples should be based on attested professional contexts whenever possible. The Russian National Corpus is a representative, linguistically annotated collection with search tools [16], and the Uzbek National Corpus provides a growing environment for checking Uzbek forms and contexts [17]. General corpora, however, may underrepresent specialized livestock discourse. A future dictionary project should therefore add a purpose-built comparable corpus containing textbooks, veterinary and zootechnical manuals, farm regulations, research articles, extension materials, and carefully transcribed professional speech from both language communities.

For digital publication, each concept record should carry provenance and version information. Preferred labels, alternatives, definitions, and semantic relations can be mapped to a knowledge-organization model similar to the one used by AGROVOC, whose Linked Open Data architecture demonstrates the value of concept identifiers and multilingual labels [15]. Such compatibility would permit later linkage to English or Latin scientific designations without making English the conceptual intermediary between Russian and Uzbek.

4. DISCUSSION

The results confirm that specialized bilingual lexicography must separate lexical access from conceptual description. An alphabetical list answers “Where is this word?” but not “Which agricultural concept does it designate?” A concept system answers the second question, while dual alphabetical indexes preserve convenient access. This is particularly important when the languages divide the field differently or when a historically broad word has acquired a narrower technical use.

The treatment of *скотоводство* illustrates the danger of symmetric-looking entries. Russian *скот* may refer broadly to domestic livestock, but the established branch name *скотоводство* is often used for cattle production. Uzbek *chorva* also has broad reference, whereas *qoramol* points specifically to cattle. A one-line dictionary may therefore create the false pair *скотоводство* = *chorvachilik*. A concept-oriented resource instead links *скотоводство* with *qoramolchilik*, relates both to the broader *животноводство/chorvachilik*, and records broader uses only when supported by context.

Species-specific birth terminology provides another test. Translating *отёл*, *окот*, *опорос*, and *жеребение* by one generic Uzbek word for birth would destroy information that Russian lexicalizes. Conversely, Uzbek can maintain traditional age, sex, colour, or condition distinctions that have no equally compact Russian label. In both directions, the lexicographer should resist the pressure to fill every equivalent field with one word. A definition, an analytic equivalent, and a species or cultural label are legitimate solutions, not signs of dictionary failure.

Measurement terms show why definitions must include parameters. *Удой/sutsog’imi* can refer to milk obtained per milking, per day, per cow, or across a lactation. *Пудец/vazn ortishi* depends on a starting point, an ending point, and a time interval. If those parameters remain implicit, translators may produce grammatical equivalents but inaccurate technical statements. The proposed entry model therefore connects the term to units, conditions, and typical combinations.

The findings also support a balanced relation between description and prescription. A specialized dictionary has a normative responsibility, particularly in education, translation, and official documentation. Yet norm-setting should be evidence-based. Borrowed and traditional forms that occur in professional communication should not disappear from the database; they should be labelled, cross-referenced, and evaluated with domain specialists. This layered approach is more useful than either unrestricted listing or rigid replacement.

The study has limitations. The pilot set of 64 concepts is deliberately compact, and its percentage distribution cannot be generalized to the entire terminology. General explanatory dictionaries provide broad lexical coverage but sometimes lack the conceptual precision required by zootechnics. Corpus coverage is uneven, especially for spoken professional Uzbek and local pastoral vocabulary. The next stage should expand the inventory, create a comparable domain corpus, and submit definitions and preferred labels to a panel of lexicographers, veterinarians, livestock scientists, translators, and experienced farmers.

5. CONCLUSION

Russian-Uzbek animal husbandry lexicography should be organized around concepts rather than isolated word pairs. The pilot analysis showed four recurrent relations: direct equivalents, internationalisms, analytic equivalents, and context-sensitive correspondences. More than half of the sample required treatment beyond a bare translation. The principal sources of difficulty were differences in taxonomic level, species restriction, word-formation, measurement parameters, professional register, and culture-specific categorization.

A reliable resource should combine a thematic concept system with Russian and Uzbek alphabetical indexes. Its entries should include preferred terms, grammatical information appropriate to each language, coordinated intensional definitions, equivalence labels, variants, semantic relations, collocations, contextual examples, usage notes, and source provenance. Uzbek

Latin forms should be primary, while searchable Cyrillic variants maintain access to earlier literature. Internationalisms and traditional designations should be retained when attested, but their normative status must be made explicit.

The practical implication is clear: equivalence is a documented relation between two designations of a defined concept, not an assumption created by placing two words on the same line. Applying this principle would improve translation accuracy, strengthen the standardization of Uzbek livestock terminology, and preserve distinctions developed in both language communities. After expansion and expert validation, the proposed model could serve as the foundation for a printed Russian-Uzbek dictionary, a searchable electronic termbase, or an interoperable agricultural knowledge resource.

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