

## Lexical-Semantic Groups of Uzbek Rice Farming Terms

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**Abstract.** Linguistic research has paid insufficient attention to the terminology related to agricultural rice cultivation activities in Uzbekistan. Studies cover agricultural terminology but a full semantic classification of Uzbek rice farm vocabulary does not exist currently. This research fills a knowledge gap through its analysis of rice cultivation terminology that classifies the terms into functional groups of lexical-semantic groups (LSGs). The researchers collected agricultural data through descriptive and analytical methods by studying texts, dictionaries along with conducting field research. The research identified 35 different LSGs that cover irrigating, cultivation and harvesting steps in addition to terms for soil preparation methods and processing as well as storage techniques. Uzbek rice farming terminology manifests through a combination of traditional agricultural practices along with geographical linguistic differences and contemporary technological progression. The analysis shows how the study uncovers the network of linguistic relationships between agricultural discourse components which demonstrates their adherence to broader syntactic and semantic relationships. Research outcomes help explain specialized vocabulary organization through explanations of semantic systems that shape lexical creation in agriculture. The findings contribute practical value for all three domains: linguistic preservation alongside agricultural education and terminology standardization which assists farmers and linguists and policymakers to develop sustainable agricultural terms. This study explores Uzbek rice farming terminology to enhance later linguistic and agricultural research that will connect language knowledge with cultural heritage in Central Asian agricultural communities.

**Key words:** *atiz, mallak, polya, small-grain rice, short-grain rice, long-grain rice, broad-leaved rice, thin-leaved rice, short-flowered rice, plowing the land, harvesting, cross-harvesting, opening the road, getting a check (pol), checking-pol, karta, shibbaling, getting the marza, opening the road, soil cultivation, carrying fertilizer.*

### Introduction

This article examines the lexical groups related to rice cultivation in the Uzbek language, focusing on the terminology used in various stages of rice farming. Agriculture has long been a significant part of Uzbek life, particularly rice farming, which has evolved over centuries. As rice became a staple food in Central Asia, a rich vocabulary developed around its cultivation. This study analyzes the names and terms used for rice varieties, their growth processes, irrigation techniques, and related farming tools. The paper also explores the semantic relationships between terms in the field of rice farming, offering a deeper understanding of the cultural and linguistic aspects tied to rice cultivation in Uzbekistan [1].

The lexicon of agriculture in the Uzbek language, including the terminology of rice farming, which is a component of it, is one of such powerful units. Agriculture has been widely developed in our country since ancient times. People engaged in agriculture as the main source of livelihood. Various

agricultural products are grown. In particular, rice cultivation gradually developed, and dishes made from rice became the main food of the peoples of Central Asia. In the process of growing agricultural products, different working tools were used, different terms related to agriculture were used, and even today, people use different terms related to planting rice, harvesting it, threshing it, storing it, and separating rice from rice. In particular, land areas where rice is planted are called fields. The word field used in literary language is used in different dialects with the terms atiz, mallak, polya [2].

Any set of lexical units existing in the language constitutes a macrogroup, and macrogroups, in turn, consist of internal microgroups and lexical-semantic groups, just as the agricultural macrogroup includes microgroups such as farming, animal husbandry, and cocooning. Agriculture, as a macrogroup, consists of the sum of microgroups such as policing, fruit growing, vegetable growing, grain growing. Grain farming, in turn, is divided into microgroups such as wheat farming, barley farming, rice farming, corn farming, millet farming, and pea farming [3].

According to the features and functions of the terms specific to the rice farming microgroup, they can be divided into the following lexical-semantic groups (hereinafter LSG):

1. LSG, representing the processes specific to the preparation of the rice field: plowing the land, harvesting, cross-harvesting, road opening, check (pol), check-pol, karta, shibbal, harvesting, road opening, tillage, fertilizing, etc[4].
2. LSG related to the process of rice seed preparation for planting: family selection, zoning, local variety, gross selection, grain and cereal plant, initial seeding scheme, first-year generation test (seed) nursery, super elite, elite nursery, side furrow seed, grain threshing, grain cleaning, super elite seed production, I and II class seed planting, seed such as heating in the sun, dry seed, ammonium sulfate solution treatment, pesticide coating [5].
3. Terms describing the process of planting rice seeds LSG: planting period, row planting, checkerboard planting, plane rice planting, seeder planting, seed sowing, seedling planting, intersection planting, seed burial. paddy cultivation, cutting into boards, etc [5].
4. LSG representing the names of the technical tools used in rice planting: tractor, bulldozer, reverse plow, chisel cultivator, zigzag harrow, traile heavy disk harrow, roller (roller), grain drill, harrow compactor, etc.
5. LSG representing the names of rice field soils and their conditions: salinity, waterlogging, reduction of soil salinity, saline soil, saline soil, non-saline soil, soil loosening, aeration and drying works, special agrotechnical rule of soil, arable layer, soil leveling, soil erosion, rolling (rolling), soil soil, dusty soil (pulkyak) soil, strong soil level porosity, such as heavy clay soil.
6. LSG representing the growth process of rice: grain swelling, seed germination, grain cracking, seed germination, grass, vegetation period, rice maturity, flower husk, panicle color, grain color, reproduction coefficient, rice lodging, rice panicle drying, grain swelling, grain germination, cracked seed, grass slow growth, vegetation period, seed such as a stroke, a period of maturity.
7. LSG representing the processes of rice cultivation: planting, irrigation, uniforming, treatment, etc.
8. LSG representing the names of the equipment used in rice cultivation: water gauge, ruler, leveling device, water measuring tube, water measuring nozzle, water measuring threshold, etc.
9. LSG representing the process related to irrigation of rice: dagish (dagish in dialects – Gurlan, Yangibozor, Beruniy) – eat; embankment, slow-absorbing soil, irrigation system, water channel, chain irrigation, marza, ear, ditch-disposal, irrigation-disposal, groundwater, swamping, land reclamation, engineering system, semi-engineering system, chain irrigation, upper floor, lower floor, flooding, thickness of water layer, rapid release of water, flood flooding, water thickness control, drying of floors in autumn, irrigation water, mirab, flood irrigation, sewage type card-floor, water distribution automation, ditch-waste network, seepage water, collector-waste network, water layer, optimal water thickness, saline washing, water filtration, water regime, barrier, hydrotechnical structure, water well, dam cleaning, border cleaning, non-absorbed water,

leveling device, continuous flood irrigation, short-term water such as burst watering, resting watering, occasional watering, sprinkler irrigation, etc [6].

10. LSG representing the processes of measuring the amount of water applied to rice: water measuring threshold, irrigation rate, water measuring channel, water measuring nozzle, water source, irrigation system, water consumption.
11. LSG representing the names of the parts of the rice stalk: plant root, rhizome, furrow, flower husk, ear tip, grain color, etc.
12. LSG specific to the names of plants growing in sholipoyas: weed, quarantine grass, nodular reed, rhizome reed, cotton, wild rice, shamak, kurkam and itkonok, kliktly kurkum, chala kliktuk kurkum, kliktikly kurkum, kliktiklyk kurkum, light green crescent, dark colored crescent, koga (small), water flowers (hydrocharids), Algae (algae) such as sedges, sedges (lox). According to their characteristics, the plants belonging to this LSG are classified as 1) a group of weeds (mesophytes) growing on land: (ajriq, bangidevona, bargizub, wild rice...); 2) a group of moisture-loving weeds (hydrophytes) (fat grass, gumai, kurmak, shamak, kurmak, itkonok); 3) a group of weeds (hygrophytes) growing in swamps (frog flower, sedge (small), reed); 4) a group of weeds (limnophytes) that grow in permanently flooded lands, natural lakes and ponds (reeds with narrow roots, reeds with root roots, watercress); 5) a group of non-rooted water flowers (hydrocharites) growing in swamps and lakes (lily, lily of the valley, low-tall nayada, grain-bearing nayada, crescent); 6) it can be divided into a group of algae (algae) consisting of inconspicuous unicellular and multicellular or rather large lumps of lower plants that form a mucous membrane or thready mass (frog thread, sage, etc.).
13. LSG representing the names of animals that live in Sholipoya: carp, white carp, frog, crab, long-nosed sholipoya, shore fly, shield crab, white crab, sholipoya fly, barley miner, spring worms, mature calf's head, aphid, rose thrips, cricket, rice grasshopper, millet tundra, etc [7].
14. LSG related to mineral fertilizers used in rice cultivation: phosphorus, nitrogen, herbicide, ammonium sulfate, potassium, rotted manure, green manure, crushed rice straw.
15. LSG representing the names of the diseases found in rice stalks: piricularia, blackworm, nematode, red grain form, root rot, etc.
16. Fusarium diseases in lawns: smut, yellow grain, mold, fungal diseases, piriculariosis, helmintosporiosis, chlorosis disease, linear rust disease, sclerotium rot.
17. Bacterial wilt diseases LSG: bacterial wilt disease, straight rot disease, linear rust disease, sclerotial rot disease, sclerosporosis disease, etc.
18. LSG related to the names of drugs used to eliminate rice diseases: magnesium chlorate, propanide, yalan, copper cupora (totiyo), dalapon, etc.
19. LSG related to rice harvesting processes: rice threshing, harvesting agro-techniques, full ripening of grain, threshing, harvesting, reaping, combine harvesting, hand-harvesting, row-harvesting, milk ripening, threshing.
20. LSG related to machinery used in rice harvesting: rice harvester, grain cleaning machine, combine harvester, hopper, grain cleaner, sorting machine, tractor, hydrotechnical structure, water tank repair, screw lubrication, barrier lubrication, sediment removal, tilting plow, chisel cultivator, disc harrow with zigzag harrow, reeling (roller walking), SPKR-6 combine, "Kolos" combine, SKD-5R combine, "Sibiryak" combine, desiccation, threshing drum, chori (vorox) cleaning, wind machine, trier block machine, grain cleaning machine, bag sewing machine, etc.
21. LSG representing the processes related to the drying of harvested rice: drying of rice, tumbling of harvested rice, ventilation, spreading of rice, spreading of rice on the road.
22. LSG specific to rice crop rotation: six fields, seven fields, ten fields, alfalfa crop rotation, wheat crop rotation, etc.

23. Terms used in rice processing LSG: rice whitener, threshing drum, threshed rice, rice grain cleaning, foreign matter, straw, leaf residue, husk, weed seed, grain dryer, grain wax (dumbul) maturity period [8].
24. LSG related to storage and sale of rice: warehouse building, state standard class, cleanliness category, seed rice warehouse, seed storage period, humidity, rice grain quality, paved threshing floor, warehouses, sheds, drying machine, grain receiving point, drying, indoor storage, drying, sorting and storage mode.
25. LSG related to the names of rice products: alcohol, vodka, sake, beer, starch, technical oil, upa, flour-like endosperm amino acid, fatty acid, mineral elements, vitamins, etc.
26. LSG for the names of articles made of rice: quality paper, tobacco paper, cardboard, rope, sackcloth, hat, shoes, bordon, bag, palos (carpet), etc.
27. LSG determining the quality of rice: trademark, rice taste, rice color, rice porridge, rice strength, rice ripening, water retention during cooking, cracked grain, broken rice, rice vitreousness, rice hairiness, flour-like endosperm amino acids, fatty acids, mineral elements, vitamins, etc.
28. LSG related to the names of fields related to rice farming: rice-growing regions, rice-growing, rice-growing, farming, seed-growing, rice-growing station, rice-growing farm, rice market, rice market, rice farmer, rice palace, etc.
29. LSG representing the names of persons related to rice: rice farmer, rice planter, rice farmer, rice seller, rice broker, combine harvester, farmer, hectare farmer, farmer, farmer, etc.
30. LSG representing the names of rice dishes: pilaf, cholov, shavla, korma, aqlosh, mastava, shirguruch, sutbirinch, rice porridge, rice bread, etc.
31. LSG representing the processes of preparing food from rice: cleaning rice, washing rice, opening rice, steaming rice, steaming rice, boiling rice, grinding rice, steaming rice, heating food (soup).
32. LSG representing ethnographies related to rice: harvest festival, offering soup, prophet's meal, distributing soup, lifting threshing floor, year's meal, el's meal, etc.
33. Units representing the processes related to the formation of rice: flower, inflorescence, wax ripening, milk ripening, full ripening, etc [9].
34. LSG representing the characteristics of rice grain: shiny, runny, smooth, bare, floury, etc.

So, each group of terms related to rice cultivation has its own conceptual characteristics.

From the end of the 70s of the 20th century, serious attention was paid to the study of the lexicon of the Uzbek language as a system. The number of researchers of the lexical system from a semasiological, onomasiological and nominasiological point of view is also increasing<sup>1</sup>. For example, in H. Ne'matov and R. Rasulov's "Fundamentals of Systemic Lexicology of the Uzbek Language" textbook, relations between language units are similarity (paradigmatic) relations; step (hierarchical) relations; Neighborhood (syntagmatic) relationships are divided into three types.

From the semantic point of view, the common types of relations between the paradigmatic members of the language can be divided into the following groups:

1. Synonymous relationship.
2. Gender-species (hyper-hyponymic) relationship.
3. Whole-piece (partonymic) relation.
4. Grading (graudonomic) relationship.
5. Duties (functional) relationship.
6. Contradiction (antonymic) relation.

In this regard, M. Abdiyev emphasizes that the word carpet in Uzbek language has a specific meaning in the lexical system of carpet making, and in carpet making, it means a type of textile. As a result of the research, it is shown that this term belongs to the following paradigm in Uzbek colloquial speech: carpet → palos → julqirs → olacha → kigiz. In this paradigm, a carpet is an item that is usually laid on the ground, floor, or hung on the wall of a house for decoration.

Compared to this, although the term devizra in our research object is used in the colloquial speech of the people of Fergana Valley in the sense of paddy rice, it forms the following paradigm related to rice varieties: devizra → kenja → alang → nim dasta → koni gul. The same can be said about the flame, junior, vanguard varieties of rice. These examples show the validity of V.M. Nikitin's opinion that it is not without benefit to learn the essence of conventional and extensional terms that indicate the content of the concept and the scope of the concept during the system-structural analysis [10].

A number of works have been carried out in Uzbek linguistics on semantic relations. There is also a partial similarity in rice cultivation. For example, barley rice is devizra, rovak is metelka, uvozonat is balance, nish is chick nose, jaidari is local, etc.

An analysis of the terms of rice cultivation, which is the object of our research, is given by partonymy (in whole). For example, rice (whole) parts: stalk, ear, husk, root, etc. Rice (whole) and its ethnonym-related parts: Chinese rice, Indian rice, Japanese rice, Uzbek rice, Tajik rice, Russian rice, etc. formed part of rice.

The whole-piece relationship is as follows: rice stem (whole) and its parts: root, tuber, leaf, bud, according to the growth rate of rice [11].

According to the hypo-hyperonymic (genus-type) analysis, rice (genus), and its varieties such as avant-garde, azure, and flame represent its type, that is, belonging to one type. Devizra (a variety of rice) is a genus in its flora, and its species are Khanabad Devizra, Khojabad Devizra, Jaydari Devizra, Rishton Devizra, Sokh Devizra, Old Devizra, White Soil Devizra, Chungara Devizra. Chongara itself is a genus, and its species were formed through combinations such as Chongara devizra, Chongara vizros, Chongara old rice, Chongara dasta, wheat-bearing Chongara, Chongara elite. Similarly, "names of rice according to disease resistance" (species) of rice include: "Istiqlol", "Istiqlal", "Bugdoy Bohok", "Aq Kiltiq", "Mustaqilik", "Iskander", "Marvarid", "Ahmad Sholi", "Guljahan", "Ilghor", "Tursunboy" [12].

In the analysis of gradonomy (grading), it is understood that the differentiation of rice "according to the level of maturity": early ripening, medium ripening, late ripening is graded. "According to the degree of irrigation of rice": short irrigation, rest irrigation, intermittent irrigation, flood irrigation. Or the gradation that represents the "process of rice rotation": six fields, seven fields, ten fields. Hydrometric posts are used to measure water consumption in rice irrigation. Hydrometric post, i.e. "water measuring post" has the following classification: base post, main post, balance (equilibrium) post, distribution post, household post, effluent post, special post, etc [13].

## Methodology

This study employs a descriptive and analytical approach to examine the terminology related to rice cultivation in the Uzbek language. Data was collected from various sources, including agricultural texts, dictionaries, and field studies, to identify and categorize terms used in rice farming. A semantic analysis was conducted to classify these terms into different lexical-semantic groups (LSGs) based on their functions, such as rice field preparation, seed planting, irrigation, harvesting, and processing. Additionally, the study explores the relationships between terms using paradigmatic, syntagmatic, and hierarchical models. The analysis aims to provide insights into the structure and development of agricultural vocabulary in the Uzbek language [14].

## Results and Discussion

The study identified various lexical-semantic groups (LSGs) related to rice cultivation in Uzbek, covering aspects like field preparation, planting, irrigation, harvesting, and processing. It revealed the complexity and regional variation in rice farming terminology. The findings underscore the

importance of documenting these terms to preserve agricultural knowledge and provide insight into the organization of agricultural language in Uzbek [15].

## Conclusion

The research highlights the rich and diverse terminology used in rice cultivation within the Uzbek language. By categorizing these terms into specific lexical-semantic groups, the study emphasizes the complexity and regional differences in agricultural practices. The findings contribute to a better understanding of the linguistic aspects of rice farming, supporting the preservation and further study of agricultural vocabulary in Uzbek. This research also underscores the need for continued documentation and analysis of specialized agricultural terms to preserve cultural and practical knowledge for future generations.

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