

## Конструктивні та функціональні особливості провідних світових баз ґрунтових даних. Аналітичний огляд

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ІНФОРМАЦІЯ	АНОТАЦІЯ
Отримано 04.01.2020 Отримано після доопрацювання 08.02.2020 Затверджено до друку 16.03.2020 Доступно онлайн 01.06.2020	Розробка концепції конструктивних і функціональних основ Ґрунтової інформаційної системи України має базуватися на аналізі відомостей про існуючі у світі ґрунтові інформаційні центри та бази даних. Для цього виконано аналітичний огляд сучасних світових публікацій у наукових журналах та інших інформаційних виданнях. Загальний перелік опрацьованих публікацій включає більше 90 наукових статей, презентацій, інструкцій, посібників, веб-сторінок тощо. В оглядовій статті представлено основні результати аналітичного дослідження і висновки щодо можливості впровадження в Україні різних аспектів позитивного досвіду світового ґрунтознавства у створенні баз ґрунтових даних. Роботу проведено трьома етапами. Перший – експертний огляд опублікованих матеріалів з відповідної тематики у зарубіжних виданнях з метою визначення основних світових міжнародних центрів ґрунтової інформації і провідних баз даних, найбільш використовуваних у світовому товаристві ґрунтознавців. В результаті представлено перелік провідних міжнародних інформаційних центрів з вказівками на місце їх локалізації і джерела інформації. Другий етап – детальне вивчення конструктивних характеристик, принципів функціонування і методів перетворення інформації у трьох найбільш відомих міжнародних базах ґрунтових даних: SOTER: Soil and Terrain database – База даних ґрунтів і земель; GSM: Global Soil Map – Карта ґрунтів Світу; WoSIS: World Soil Information Service – Світова ґрунтова інформаційна служба. Узагальнено інформацію про перелік атрибутів у кожній базі даних, способи їх кодування, спільні підходи до конструкції таблиць, нормування параметрів, формування набору метаданих тощо. І на третьому етапі було визначено перелік найбільш інноваційних особливостей конструкцій національних баз даних у різних країнах Європи і світу, прийнятних для застосування в Україні.
<i>Ключові слова:</i>  атрибути; база даних; ґрунт; конструкція; метадани	

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# Design and functional features of the world leading soil databases. Analytical review

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ARTICLE INFO	ABSTRACT
<p>Received 04.01.2020 Received in revised form 08.02.2020 Accepted 16.03.2020 Available online 01.06.2020</p> <p><i>Keywords:</i></p> <p><i>attributes;</i> <i>construction;</i> <i>database;</i> <i>metadata;</i> <i>soil.</i></p>	<p>The development of the concept of structural and functional foundations of the soil information system of Ukraine should be based on the analysis of information about the existing soil information centers and databases in the world. For this purpose, an analytical review of modern world publications in scientific journals and other sources of information was performed. The total list of investigated publications includes more than 90 scientific articles, presentations, instructions, manuals, web pages etc. The review article presents the main results of analytical research and conclusions on the possibility of introducing in Ukraine various aspects of the positive experience of world soil science in the creation of soil databases. The work was carried out in three stages. The first was an expert review of published materials on relevant topics in foreign publications in order to identify the world's major international centers of soil information and leading databases most used in the World Society of Soil Scientists. As a result, a list of leading international information centers was provided, with an indication of their location and source of information. The second stage was a detailed study of the design characteristics, principles of operation and methods of information transformation in the three most famous international soil databases: SOTER: Soil and Terrain database; GSM: Global Soil Map; WoSIS: World Soil Information Service. The information about the list of attributes in each database, methods of their coding, common approaches to the construction of tables, normalization of parameters, formation of a set of metadata, etc. was summarized. And at the third stage the list of the most innovative features of national database designs in different countries over the World, acceptable for use in Ukraine, was determined.</p>

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## **Конструктивные и функциональные особенности ведущих мировых почвенных баз данных. Аналитический обзор**

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Разработка концепции структурно-функциональных основ почвенной информационной системы Украины должна основываться на анализе информации о существующих в мире почвенных информационных центрах и базах данных. С этой целью был проведен аналитический обзор современных публикаций в научных журналах и интернет источниках информации. Общий список обработанных публикаций включает более 90 научных статей, презентаций, инструкций, руководств, веб-страниц и многое другое. В обзорной статье представлены основные результаты аналитических исследований и выводы о возможности внедрения в Украине различных аспектов положительного опыта мирового почвоведения в создании почвенных баз данных. Работа проводилась в три этапа. Первый - это экспертный обзор опубликованных материалов по соответствующим темам в иностранных публикациях с целью выявления крупнейших в мире международных центров почвенной информации и ведущих баз данных, наиболее часто используемых во Всемирном сообществе почвоведов. В результате приведен список ведущих международных информационных центров с указанием их местонахождения и источников информации. Второй этап – это подробное изучение конструктивных характеристик, принципов работы и методов преобразования информации в трех наиболее известных международных базах почвенных данных: SOTER: Soil and Terrain database - База данных о почве и земле; GSM: Global Soil Map – Карта почв мира; WoSIS: World Soil Information Service – Всемирная служба информации о почве. Обобщены сведения о списке атрибутов в каждой базе данных, методах их кодирования, общих подходах к построению таблиц, нормализации параметров, формировании набора метаданных и т.д. И на третьем этапе был определен список наиболее инновационных особенностей конструкций национальных баз данных в разных странах Европы и мира, приемлемых для использования в Украине.

*Ключевые слова:* атрибут; база данных; конструкция; метаданные; почва;