

DIRECTIONS OF AUTOMATIZATION FOR CALCULATION OF SOIL QUALITATIVE ASSESSMENT

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It was considered results of calculations of agrochemical and environmental-agrochemical scores by the standard procedure and several alternative indicators. It was proposed to perform calculations by means of Calculator of Quality of Soils of Ukraine. Use of this calculator allowed to reveal potential ways to improve its performance. Since the distribution of soil properties have a continual character, it makes sense to count and corresponding continual agrochemical and ecological-agrochemical points. The implementation of this approach is possible with the use of modern GIS tools. Currently we are working on the implementation of the described calculations to free GIS GRASS, which is distributed under the GNU GPL General Public License and is a powerful tool for the implementation of the conceived project. This interface will be written in the programming language Python, mapping aspects will be implemented by means of elements of map algebra. We feel that this approach would have clear advantages in today's precision agriculture and soil monitoring.

Keywords: *Calculator of Quality of Soils of Ukraine, environmental-agrochemical score, composite index of soil quality, generalized index of soil fertility.*

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НАПРАВЛЕНИЯ АВТОМАТИЗАЦИИ РАСЧЕТА ОЦЕНКИ КАЧЕСТВА ПОЧВЫ

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Рассмотрены результаты расчетов агрохимического и эколого-агрохимического баллов по стандартной методике и с применением ряда альтернативных показателей – сводного показателя качества почв и обобщенного показателя плодородия почв, применяемых в практике оценки качества сельскохозяйственных земель. Представлены структурные характеристики разработанного и уже протестированного *Калькулятора качества почв Украины/ Calculator Quality of Soils of Ukraine*, существующего в виде электронной таблицы (MS Excel). Калькулятор позволяет быстро и разными способами получить детальную характеристику качества нескольких земельных участков. Показаны пути рационального применения калькулятора и его развития, в частности, возможности его адаптации для использования в ГИС, что потенциально может расширить возможности для современного точного земледелия и мониторинга. Оптимальным путем достижения этой цели признано интегрирование калькулятора в свободную ГИС GRASS.

Ключевые слова: *Калькулятор качества почв Украины, агрохимический и эколого-агрохимический балл, сводный показатель качества почв, обобщенный показатель плодородия почв.*