

AGROECOLOGICAL ASPECTS OF THE APPLICATION OF MINERAL FERTILIZERS IN AGRICULTURAL PRODUCTION

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The research was carried out in the long stationary and temporary field experiment on chernozem in order to determine regularities change of the basic indicators of the environmental condition of the soil (accumulation of mobile forms of heavy metals and soluble fluorine migration nitrate forms of nitrogen in the soil profile) under the influence of the application of different forms and doses of fertilizers with different duration. Investigations were conducted using comparative statistical research methods, short- and long-term observations of soil and environmental processes in field experiments; analytical research was performed using standardized methods. It was established that in the maximum fertilized variants of concentration of the elements in soil are within acceptable levels of pollution. The contribution of fertilizer pollution in chernozem typical with heavy metals and fluoride is not comparable with a significant anthropogenic source of pollution. It was found that by application of liquid anhydrous ammonia in agriculture the intensity migration of nitrate nitrogen to a depth of 100-120 cm is almost twice higher compared to application of traditional ammonium nitrate.

Key words: fertilizers, heavy metals, fluoride, liquid anhydrous ammonia, environmental problems

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АГРОЭКОЛОГИЧЕСКИЕ АСПЕКТЫ ПРИМЕНЕНИЯ МИНЕРАЛЬНЫХ УДОБРЕНИЙ В СЕЛЬСКОХОЗЯЙСТВЕННОМ ПРОИЗВОДСТВЕ

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В полевых опытах на черноземах с применением разных форм и доз удобрений вносимых с разной периодичностью исследовали особенности накопления подвижных форм тяжелых металлов и фтора. Установили, что на максимально удобренных вариантах концентрация исследуемых элементов в почве находится в пределах допустимых уровней загрязнения. Установили, что при использовании жидкого безводного аммиака интенсивность миграции нитратного азота на глубину до 100-120 см почти вдвое выше, по сравнению с внесением традиционной аммиачной селитры.

Ключевые слова: минеральные удобрения, тяжёлые металлы, фтор, жидкий безводный аммиак, экологические проблемы.