CONTENTS

Physics, Biophysics and Ecology of Soils

Complex formation of metal ions in soil solutions
Belopukhov S. L., Savich V. I., Baybekov R. F. 1

Accumulation of cadmium and mercury in wheat under liming of sod-podzolic soil
Efremova M. A., Mitrofanov V. V., Lokhmatova A. A., Akatova A. A. 8

Assessment of anthropogenic impact on the structure of soil cover of Upper Volga region agroecosystems
Zinchenko S. I., Schukin I. M. 16

Influence of biochar and vegetable residues on the content of hot-water extractable carbon and nitrogen compounds in sod-podzolic soil
Miloserdova V. A., Rizhiya E. Y., Orlova N. E., Bankina T. A. 23

A comparative study of calcium migration intensity in different parts of the field at uneven application of meliorant (model experiment)
Pavlova O. Yu., Litvinovich A. V., Lavrischev A. V., Bure V. M. 31

Energy and economical efficiency of site-specific application of mineral fertilizers in field crop rotation
Tcyganova N. A. 37

Study of interrelation of hydrothermal soil conditions with integrated characteristics of energy and mass transfer in «soil – plant – atmospheric surface layer» system
Dobrokhotov A. V., Romanov G. P., Kozyreva L. V. 45

Physical, physiological and genetic basis for biological productivity of soil-plant complexes under natural and controlled conditions

Morphological and physiological variability of small radish (*Raphanus Sativus* L.) grown under various conditions
Kurina A. B., Artemyeva A. M. 52

Precision farming and animal husbandry –the latest technologies for the production of agricultural products based on the use of information technology

Current state and trends of developing new methods for quantitative assessment of within-field heterogeneity for precision agriculture
Matveenko D. A., Voropaev V. V., Yakushev V. V., Blokhin Yu. I., Blokhia S. Yu., Mitrofanov E. P., Petrushin A. F. 59