

ON THE WAY TO PRECISE LAND CULTIVATION

Kh.Sh. TARCHOKOV, M.M. CHOCHAEV, R.M. DUGARLIEV

Institute of Agriculture –
branch of Federal state budget scientific establishment "Federal scientific center
"Kabardin-Balkar Scientific Center of the Russian Academy of Sciences"
360004, KBR, Nalchik, 224, Kirov street
E-mail: kbniish2007@yandex.ru

According to UN forecasts, by 2050 the world's population will increase by 2 billion and reach the level of 9 billion people. And the area of farmland is limited: in 1970 it did not exceed 0.4 hectares per capita; in 2005 - 0.25 of a hectare. By the indicated 2050, the value of this indicator will decrease to 0.17 ha. This indicates the need to constantly increase crop yields, milk yield, meat production, etc.

In our opinion, the most important issue around which discussions are going on all over the world are methods for achieving this goal. It is assumed that the problem will be solved through a predatory attitude towards nature, but such an approach is unlikely to have a future. From the point of view of precision farming, the modern nature management model is designed to ensure, along with production, increasing soil fertility and preserving its environmental functions in the biosphere.

According to the Ministry of Agriculture of Russia over the past three years, the removal of nutrients from the soil with the crop amounted to 38.9 million tons compared to 15.8 million tons contributed. In developed countries with advanced agricultural technologies it amounts to 180-250 kg per hectare and in Russia - only 37.0 kg / ha. This causes the need for a reminder that we produce up to 22.0 million tons in AI mineral fertilizers, from which our soils receive only a little more than 3.0 million tons [6].

Therefore, it is so important to "polish" the most important mechanisms for transferring new-generation agricultural technologies to the rails of precision land cultivation (PLC) and adaptive crop production in general.

The article substantiates the "instability" of the previously obtained results of research in the field of agriculture, which cannot act as a mechanism of growth and territorial development that meet the modern requirements of the "Precision Land Cultivation" Program.

Keywords: agrobiology, precision land cultivation, classical agronomy, economic effect, modeling methods, information technology, herbicides, leguminous crops, chemical winter weeding.

REFERENCES

1. Kiryushin V.I. *Ekologizatsiya zemledeliya i tekhnologicheskaya politika* [Application of ecology principles of land cultivation and technological policy]. M.: Publishing House of the Ministry of Agriculture, 2000. 473 p.
2. Kiryushin V.I. *Ekonomicheskiye osnovy proyektirovaniya sel'skokhozyaystvennykh landshaftov* [Economic fundamentals of designing agricultural landscapes]. St. Petersburg, Quadro Publishing House, 2018. 556 p.
3. Kashtanov A.N. and others. *Pochvozashchitnaya sistema vosproizvodstva plodorodiya chernozemov v zone Armavirskogo vetrovogo koridora Krasnodarskogo kraya. V kn.: Nauchnyye osnovy degradatsii pochv (zemel') sel'skokhozyaystvennykh ugodiy Rossii i formirovaniya sistem vosproizvodstva ikh plodorodiya v adaptivno-landshaftnom zemledelii* [The soil protection system for the reproduction of chernozem fertility in the zone of the Armavir wind corridor of the Krasnodar Territory. In: Scientific basis for the degradation of soils (lands) of agricultural lands in Russia and the formation of systems for the reproduction of their fertility in adaptive landscape agriculture]. Moscow, 2013. Vol. 3. Pp. 224-225.
4. Gostev A.V. *Effektivnost' tekhnologiy razlichnogo urovnya intensivnosti pri vozdeystvovanii zernovykh kul'tur na chernozemnykh pochvakh Tsentral'nogo Chernozem'ya* [The effectiveness of technologies of various levels of intensity in the cultivation of crops on chernozem soils of the Central Chernozem Region]. Kursk, 2017. Pp. 29-33.

5. Cherkasov G.N. *Adaptivno-landshaftnoye zemledeliye: teoriya i praktika* [Adaptive-landscape land cultivation: theory and practice]. Kursk, 2018. 330 p.

6. Baybekov R.F. *Prirodopodobnyye tekhnologii - osnova stabil'nogo razvitiya zemledeliya* [Nature-like technologies are the basis for the sustainable development of land cultivation] // Agriculture. 2018. No. 2. Pp. 3-6.

Tarchokov Khasan Shamsadinovich, Candidate of agricultural sciences, leading staff scientist of the Institute of Agriculture - a branch of the Kabardin-Balkar Scientific Center of the Russian Academy of Sciences.

360004, KBR, Nalchik, Kirov street, 224.

Ph. 8-906-189-19-89.

E-mail: kbniish2007@yandex.ru

Chochaev Magomed Makhmudovich, Senior researcher, deputy Director for General Affairs of the Institute of Agriculture - a branch of the Kabardin-Balkar Scientific Center of the Russian Academy of Sciences.

360004, KBR, Nalchik, Kirov street, 224.

Ph. 8-928-715-38-80

E-mail: kbniish2007@yandex.ru

Dugarliev Ruslan Mukharbievich, graduate student of the REC of the Kabardino-Balkarian Scientific Center of the Russian Academy of Sciences.

360002, KBR, Nalchik, Balkarova street, 2.

Ph. 8-963-165-33-03.

E-mail: aspirantura07@mail.ru