24% yield gains, respectively.

During the last two years we included an increased Zn rate of $150 \mathrm{~g~ZnSO_4}/100 \mathrm{~kg}$ seed into the study for both the $\mathrm{N_{30}P_{60}}$ and $N_{30}P_{60}K_{60}$ treatments; however, no further yield increase was found with this high Zn rate (data not shown). The optimal Zn rate for seed dressing, therefore, may be recommended as $100 \text{ g ZnSO}_4/100 \text{ kg seed}$.

Comparing the average yields in treatments receiving $N_{30}P_{60}$ and $N_{30}P_{60}K_{60}$ it can be concluded that K fertilizer has practically no any effect when applied to winter triticale. A positive effect of K fertilizer on grain yield was, nevertheless, revealed in the 2007-2008 season that was characterized by a low snowfall in winter and inadequate precipitation during several months.

Seed dressing with ZnSO₄ powder in treatments receiving $N_{30}P_{60}$ and $N_{30}P_{60}K_{60}$ had a small positive effect on grain quality of winter triticale (Table 2). Nevertheless, the maximum grain protein (17.1%) was formed in the $N_{30}P_{60}K_{60}$ treatment with Zn seed covering at a rate of 100 g ZnSO₄/100 kg seed.

Summary

In conclusion, our results indicate that Zn fertilizer has a significant positive effect on both grain yield and quality of winter triticale grown on meadow-chernozem soil in the Southern forest-steppe zone of Western Siberia. It was revealed that soil applied Zn fertilizer under these environments generally is more effective in increasing grain yield compared to seed treatment. The optimum Zn rates for soil application and seed treatment were found to be 8 kg Zn/ha and 100 g ZnSO₄/100 kg seed, respectively.

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Omsk State Agrarian University, Omsk. The authors acknowledge Dr. V. Nosov, Director, IPNI Southern and Eastern Russia Region, for his comments and help during the preparation of this article.

References

Bobrenko, I.A., N.V. Goman, V.I. Popova and E.P. Boldysheva. 2011a. Omsk Science Herald, 1 (104): 246-250. (In Russian).

Bobrenko, I.A., V.M. Krasnitskiy, N.V. Goman and V.I. Popova. 2011b. Soil Fertility, 4: 18-19. (In Russian).

Sechnyak, L.K. and Yu.G. Sulima. 1984. Triticale. Moscow, Kolos. 317 p. (In

Krasnitskiy, V.M. 2002. Agrochemical and ecological characteristics of soil of Western Siberia. Omsk, Omsk State University Printing House. 144 p. (In Russian).

Krasnitskiy, V.M. 1999. Agrochemical characteristics and fertility of soils of Omsk Oblast. Omsk, Omsk Printing House. 51 p. (In Russian).

Orlova, E.D. 2007. Microelements in soils and plants of Omsk Oblast and use of microfertilizers. Omsk, Omsk State University Printing House. 76 p. (In Russian).

Ermokhin, Yu.I. 1995. Diagnostics of plant nutrition. Omsk, Omsk Agrarian University Printing House. 208 p. (In Russian).

InfoAg Conference Update

nterest in the implementation of precision ag technologies was highly evident at the 2013 edition of The InfoAg Conference,



which drew a record number of 1,100 participants this past July 16-18, in Springfield, Illinois.

The International Plant Nutrition Institute (IPNI) partnered with Crop Life Media Group and PAQ Interactive to provide the "premier precision ag event of the year" designed to share expertise amongst practitioners, vendors, and researchers, and showcase new developments within the precision ag industry.

"InfoAg was designed to be a leading edge source for information on technology in crop production, data management, and communication and it continues to deliver," said Dr. Terry Roberts, IPNI President. "I was impressed with the enthusiasm and excitement of the audience and the quality of the presentations."

In his opening address to the plenary session titled "Connecting the Dots", Dr. Steve Phillips, IPNI Southeast U.S. Region Director, and InfoAg Conference Co-Chair summarized, "You can see how this conference has grown and the depth of



the relationships and the partnerships that we're able to form by bringing all levels of precision agriculture together at this one event." He also emphasized the increasing role of precision ag in 4R Nutrient Stewardship (i.e., using the right nutrient source at the right rate, right time, and right place) throughout the world, in both developed and developing countries. "It's going to take all of us working together, and it's going to be the precision ag industry that's going to move 4R Nutrient Stewardship forward."

As a reflection of the growth of the conference and a desire to build on the momentum generated from the event, InfoAg is moving from its traditional biennial schedule to become an annual event. The event will take place on July 29-31 at Union Station, St. Louis, Missouri in 2014.

Additional links: InfoAg Conference Newsletter: http:// infoag.org/subscribe; InfoAg on Twitter: @InfoAg