UDC 631. 58: 633. 111

FORMATION OF HIGHLY PRODUCTIVE SOWINGS OF SOFT WINTER WHEAT

Yu.F. TERESHCHENKO, Doctor of Agricultural Sciences
Uman National University of Horticulture
L.I. ULICH, Candidate of Agricultural Science, Associate Professor
Ukrainian Institute of Variety Testing

The results of years of research on the formation of high-yield of winter wheat based on the selection of complementary varieties, suitable place for them in crop rotation, fertilization, sowing terms, seed rates, sowing characteristics and yielding properties of seeds, seeds placing on sowing lodge, obtaining friendly, equal, uniform, comprehensive, competitive capable of sprouts, differentiated care after sowings with the creative, situational account of the existence of nutrients in the soil, CHVVV, weather and phyto-sanitary conditions are presented.

Keywords: *winter wheat, variety type, complementary varieties, high-intensive varieties, intensive varieties, half-intensive varieties, varietal technology, grain quality, seed sowing quality.*

M.I. Vavilov, and then I.M. Eremeyev on the example of world famous variety Ukrainka 0246, argued that one, even the best grade isn't able to meet all the needs of production [1, 2]. Investigations of I.M. Eremeyeva on varietal agrotechnics improvement of Ukraine in the sixties of the last century in Uman were significantly supplemented by S.K. Rudenko, who on irrigation with nitrogen fertilizers by the method of A.O. Sapehin [3] obtained the yield 60 kg/ha, and S.M. Buhay including new varieties of [4,5]. Stepan Karpovych, as Ivan Maksymovych, headed the Department of Plant Growing, but before lectured about the wheat, which began with the phrase: "Wheat – is the daily Bread ...". Samson Mytrofanovych, taking the chair and the idea of varietal agrothechnics Ivan Maksymovych steadily and persistently developed and embodied it. Research has expanded with the introduction of the famous varieties-ancestor of corresponding variety types Bezosta 1 of P.P. Lukyanenko and Myronivska 808 of V.M. Remesla [7 – 9] under the guidance of S.S. Rubin and O.P. Danylevskyy,Yu.F. Tereshchenko in collaboration with G.P. Zhemela, postgraduates A.M. Pastukh, A.V. Korotyeyev, R.L. Ishchenko, K.Ya. Korotya, L.D. Prokopenko [10], O.L. Ulich [11], graduates V.Ya. Bilonozhko, M.I. Boyko, N.I. Kovtun, N.M. Neshta, S.G. Parkalaba, V.T. Martynyuk, V.G. Maslovatyy, M.G. Hutsal, G.A. Ryabokon' and many others and continue in collaboration with L.I. Ulich [12] and others. Current registered varieties is a major achievement of breeding establishments of Ukraine [13]. By the intensity they are divided into high-intensive (half dwarfish or stunted), intensive (variety type Bezosta 1 - average height or "universal", resistant to lodging, but after rehumidifying of soil, the lodging of root type is possible) and half-intensive (variety type Myronivska 808 - tall, highly plastic, highly life resistant, competitive on weeds, except for some, but medium-resistant to root type lodging). As in the whole the positive replacement of zoning registration of varieties limited the scope and topics of current issues of variety studying and complicated the selection of complementary varieties under specific regional and economic conditions, we believe that our research results will promote their selection, realization of the genetic potential, the formation of high-productive sowings and solution of problems of bread.

Research Methodology. The study was conducted by the method of state variety testing and other conventional methods [14] in Uman NUH, Kirovohrad and Bila Tserkva RVS respectively during 1965 - 1995, 1998 - 2004 and 2004 – 2011.

The research results show that under the proper selection and usage of complementary varieties in conventional and intensive variants of technologies, productivity of food grains of I-III quality classes and high-quality seeds in average amounted in 1985 - 1995 respectively 40 - 50 and 50 - 70 dt/ha. Resistant to lodging varieties of Bezosta 1 type form a substantially higher productivity indices of spike, density of productive stems, yield and quality of grain by placing on

fallow without fertilizers and with fertilizers and after clover on fertilizers. After the clover without fertilizers and peas without fertilizers and with fertilizers they don't have significant advantages, and after maize without fertilizers and with fertilizers give in the highly plastic varieties of type Myronivska 808. Highly productive, strong by baking qualities of grain varieties of both types on the same agricultural background dominated the variety Ukrainka 0246 on average by the yield of 13.7 t/ha, but inferior by protein content in 0.69 - 1.68% and crude gluten in grains 3,5 - 4.9%, since for the formation of high-protein grain with higher yields require adding appropriate amount of fertilizers. The optimal fertilizer system at the above mentioned location of varieties in crop rotation is a combination of the main phosphorus-potassium fertilizer after fallow, clover and peas and complete mineral after corn to silage with nitrogen fertilization in the phase of tillering in spring, booting and ear formation, respectively $P_{90}K_{60}+N_{30x3}$ and $N_{90}P_{90}K_{60}+N_{30x3}$. Differentiated fertilizer system at creative, situational consideration of the existence of nutrients in soil and plants, sowings state, CHVVV, weather and phyto-sanitary conditions at regular and intensive technologies provided the yield of grain of I-III class quality and high-quality seeds on average 45.8 - 53.6 and 54.6 - 73.2 dt/ha [15] and implemented in farms of different patterns of ownership [16]. A close direct correlation dependence of yield from applying in complex of measures of intensive protection technologies against pests, diseases, weeds, lodging and soil acidity ($r = 0.881$) and weight of 1000 seeds of sowing material ($r = 0.803$) is found. High efficiency of rapid seed multiplication by strip planting method of Myronivska breeding station [2], the sowing norms on the optimal final density of productive stems [17] and optimal compromise placement of seeds on the seed bed [18] are confirmed.

Research in Kirovograd RVS (1998 - 2002) showed that high-intensive varieties have provided the highest yield on black fallow (75.6 dt/ha) and lower by 20.1 dt/ha after corn, intensive after fallow were inferior to highly intensive on 5.2 dt/ha and after corn – by 10.6 dt/ha, and half intensive after fallow – by 12.6 dt/ha, but after the corn – exceeded them by 5.0 dt/ha. You should begin sowing after increase of the daily average temperature over 15°C closely with highly plastic half intensive varieties after the corn to silage, continuing by intensive varieties after pea, grain-oats and sainfoin and ending with highly intensive on fallow, which falls approximately on the period between 10 to 30 September. Enhanced on the basis of this approach to cultivar studying and selection of complementary varieties, placing them in a crop rotation and sowing terms regional resource saving technology provided the formation of yield 65.0 - 75 dt/ha of I-III class quality grain with efficiency 90 - 132% [11].

Conclusions. In the southern part of the Right-Bank Forest-Steppe it is advisable to plant in fallow strong by quality grains, highly intensive varieties after perennial grasses, grain-oats and peas - intensive after maize to silage – half intensive. The best background for fertilizing is a combination of basic phosphorus-potassium fertilizer after better predecessors and complete mineral fertilizer after corn with nitrogen spring and summer feeding, respectively $P_{90}K_{60}$ and $N_{90}P_{90}K_{60}$ with N_{30x3}. You should begin sowing after increase of the daily average temperature over 15°C closely with highly plastic half intensive varieties after the corn to silage, continuing by intensive varieties after pea, grain-oats and sainfoin and ending with highly intensive on fallow, which falls approximately on the period between 10 to 30 September.

Appropriate selection of complementary varieties, placing them in a crop rotation and sowing terms regional resource saving technology provided the formation of yield 65.0 - 75 dt/ha of I-III class quality grain.

The benefit of intensive technologies by yield versus conventional by varieties and predecessors amounted on average about 10 - 20 dt/ha. A close direct correlation dependence of yield from applying in complex of measures of intensive protection technologies against pests, diseases, weeds, lodging and soil acidity ($r = 0.881$) and weight of 1000 seeds of sowing material ($r = 0.803$) is found. High efficiency of rapid seed multiplication multiplication by strip planting method of Myronivska breeding station [2], the sowing norms on the optimal final density of productive stems [17] and optimal compromise placement of seeds on the seed bed [18] deserve attention.

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