**ОДЕСЬКА НАЦІОНАЛЬНА АКАДЕМІЯ
ХАРЧОВИХ ТЕХНОЛОГІЙ**

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РОЗДІЛ 1

АКТУАЛЬНІ ПИТАННЯ ЗБЕРІГАННЯ ТА ТЕХНОЛОГІЇ ПЕРЕРОБКИ ЗЕРНА, ОВОЧІВ ТА ФРУКТІВ

Next, the sourdough flow curve was based on the obtained results. For finding specific values of limit shearing stress was builded double logarithmic flow curve, fig. 1.

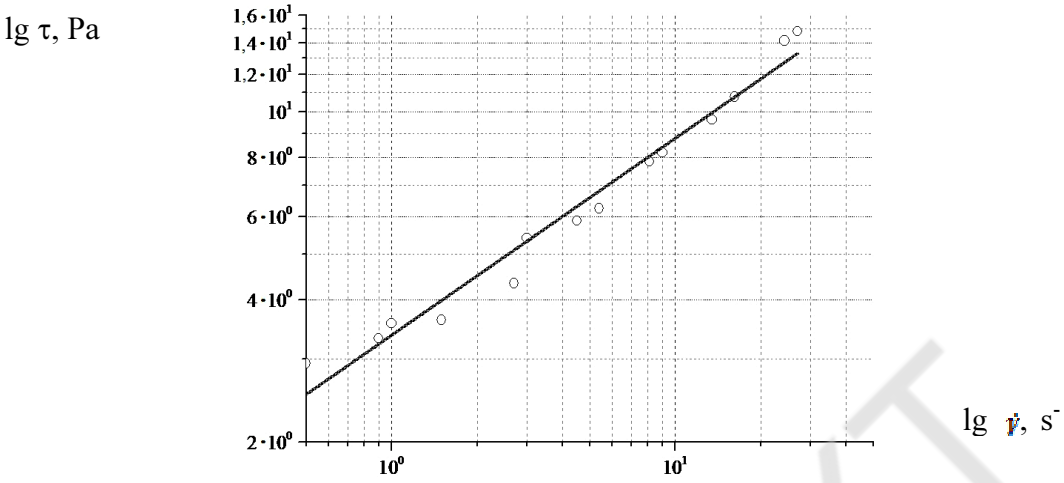

Fig. 1 – Double logarithmic flow of sourdough curve

Analyzing the curves plotted in logarithmic coordinates, you can get two parameters describing the structural and mechanical properties of the liquid sourdough. Precisely, flow index is numerically equal to the tangent of linear dependence lg τ – lg $\dot{\gamma}$ graphs angle slope.

The second parameter, which is the aim of our research, is a segment on the y-axis which is cutted by the resulting curve. Its value is numerically equal to (lim ≈ 2 Pa. This value indicates that there is no sourdough flowing and external effects can't disrupts it's structure. With further increase in voltage, when $\tau > \tau_{lim}$, system begins to flow. Migration speed in this case is negligible, the connection between the particles after their destruction recovers again.

We can surmise that the liquid opara with a 65 % humidity has a limit shearing stress, although its value is so small, so that can be ignored. Taking $\tau_{lim} = 0$, the sourdough can be identified as a pseudoplastic fluid. Pseudoplastic flow and pseudo-plastic fluid are related to the fact that the yield stress is zero.

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EVALUATION OF WINTER WHEAT VARIETIES BY FLOUR YEILD WITH GRAIN YIELD

Leshchenko I.A., student level "master's" faculty of Engineering and Technology
Uman National University of Horticulture, Uman

The main assessment grade is the value of the performance and quality of grain, however, not always high yield corresponds to the high output of the ready product during

processing. Therefore, the assessment of winter wheat varieties on the output of flour as with units of grain and its yield is necessary [1].

Stability of variety yield is largely dependent on temperature fluctuations in winter, freezing in snowless winters, thaw, ice cover, drought or water logging during the growing season, plant lesions by fungal diseases, etc. [2]. Degree and character of changes of environmental conditions can significantly affect the yield of winter wheat, because, according to experts, the variability of weather causes significant (40-60 %) yield fluctuations of this crop [3].

Experimental work was carried out in conditions of educational-research-production department of Uman National University of Horticulture during 2011-2013. General agriculture of winter wheat cultivation is common for the Right-Bank Forest-Steppe of Ukraine. In the experiment winter wheat was grown, the predecessor of which was vetch oats for green fodder. Soil of the research field is podzolic hard loamy chernozem on loess. Crop was harvested in plots, mathematical and statistical analysis of data was carried out using the standard software package "Microsoft Excel 2003".

Research results. Our studies revealed that the greatest yield varieties Jubiljar Myronivskyi, Khmelnychanka, Romantyka and Akrotos had, which exceeded the standard at 15-46 %, which was also significant compared with $HIP_{05}=0,31–0,50$ during years of research. The yield of the remaining varieties fluctuated within 6.95-7.58 t/ha.

Favorable temperature and water regime in 2011 contributed to more grain yield of winter wheat which fluctuated within 7.35-13.86 t/ha. High temperature during the growing season of wheat in 2012 and lack of moisture in the phase of grain formation caused getting lower grain yield (7.19-13.45 t/ha). In 2013 grain yield decreased considerably and fluctuated within 4.21-5.95 t/ha (Table 1).

Table 1 – Winter wheat yield depending on the variety, t/ha

Variety	Research year			Average over three years
	2011	2012	2013	
Podolianka (st.)	9,12	8,41	5,21	7,58
Romantyka	11,58	11,92	4,32	9,27
Kopilyvchanka	8,24	7,95	5,76	7,32
Khmelnychanka	11,39	11,03	5,04	9,15
Akrotos	13,86	13,45	5,95	11,08
Dyskus	7,47	7,19	3,42	6,03
Jubiljar Myronivskyi	11,25	10,86	4,21	8,77
Kubus	7,35	7,68	5,84	6,95
LSD_{05}	*0,47*	*0,50*	*0,31*	

Estimated yield of winter wheat flour varied depending on the variety (Fig. 1). All studied varieties of winter wheat were characterized by high nominal yield of flour per unit of grain, but its highest yield was obtained from grain varieties Kopilyvchanka – 74.3 %, Discus – 74.6 % and Khmelnychanka – 75.4 %, in other varieties this figure fluctuated within 69,2-73,4 %.

Flour yield of grain harvest of winter wheat on average over three years varied from 4.49 t/ha to 7.97 t/ha depending on the variety. The highest flour yield was of varieties Romantyka – 6.8 t/ha, Khmelnychanka – 6.89 and Akrotos – 7.97 t/ha, which exceeded the standard at 24-45%. The lowest flour yield was of varieties Dyskus – 4.49 t/ha and Kubus – 4.8 t/ha (Fig. 2).

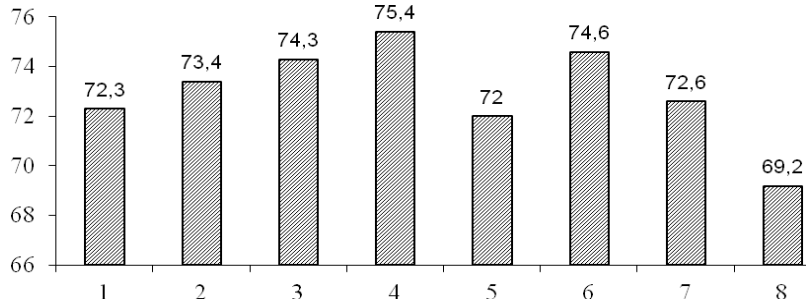
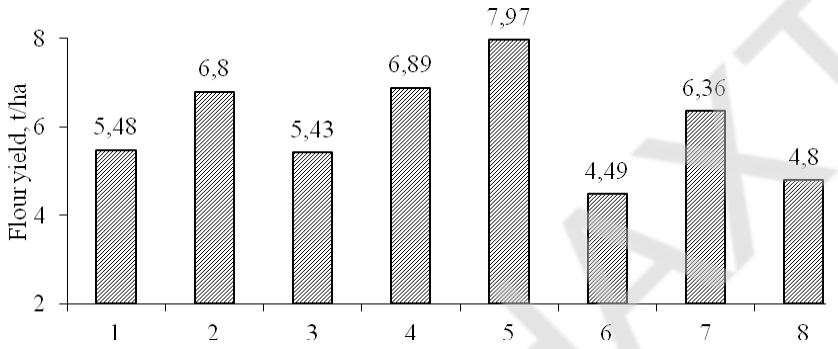


Fig. 1 – Nominal flour yield per grain unit of winter wheat depending on the variety (2011-2013), %



1 – Podolianka (cm.); 2 – Romantyka; 3 – Kopilyvchanka; 4 – Khmelnychanka; 5 – Akrotos; 6 – Dyskus; 7 – Jubiljar Myronivskyi; 8 – Kubus.

Fig. 2 – Flour yield per grain unit of winter wheat depending on the variety (2011-2013), %

Conclusions. Yield of winter wheat varies depending on the variety and weather conditions. Thus, the greatest yield varieties Jubiljar Myronivskyi, Khmelnychanka, Romantyka and Akrotos have. The highest nominal flour yield (74.3-75.4 %) varieties Kopilyvchanka, Dyskus and Khmelnychanka have, the highest flour yield of grain yield of winter wheat variety Akrotos has (7.97 t/ha).

Scientific Supervisor – PhD, Associate Professor Liubych V.V.

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СУЧАСНА ПЕРЕРОБКА САДОВО-ГОРОДНЬОЇ СИРОВИНИ У ФРЕШ-БАРАХ СУЧАСНИХ ФУД-КОРТІВ
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Головний редактор, д-р техн. наук. Б.В.Єгоров
Заст. головного редактора, д-р техн. наук. Л.В.Капрельянц
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