

From Words to Deeds!

Brewing industry is one of the most advanced and fast-growing branches of the food industry. In Russia it is represented by more than 700 brewing companies with different production capacities located in 73 territorial entities of our country, 1500 product brands and 60 thousands of people employed. It is therefore not surprising that brewing industry nowadays has become the integral sector of economy, the brewery products' subdivision of agroindustrial complex of the Russian Federation.

What makes the production "malting barley

- beer" chain absolutely unique - are 400 agricultural manufacturers, more than 30 malt houses and 700 brewing factories involved in the process.

There are about 60000 workplaces created directly on the brewery basis, and 350000 workplaces in related sectors (primarily within the agroindustrial complex). The overall investments in the latest decade have surpassed \$15 billions. There is no other finished product of the agroindustrial complex in the world having such a big amount of processing cycles with the application

of the cutting-edge technologies. And the final product of the chain is unique: beer is both food and alcoholic product. That's why the particular focus of the Government to this kind of products is absolutely natural. The state regulation of brewing industry is needed.

In 2008 - the most successful year for the production chain - 2,5 million tons of malting barley, 1,6 million tons of malt and 11,3 billion liters of beer were produced. The yearly production of malting barley and malt provides the budget of the agroindustrial complex with more than 50 billion rubles of the direct revenues. And as statistics of 2013 says, brewing industry enterprises transferred to the regional budgets of Russia around 130 billion rubles of excise taxes.

"Foamy beverage" arrived in our country from Europe and today we are still striving to meet the western production standards, that stipulate to consider beer as a drink made from brewer's malt, hops and water (the "Beer Purity Law", Bavaria, 1516.).

FROM «OVERCOOK» TO MODERN TIME

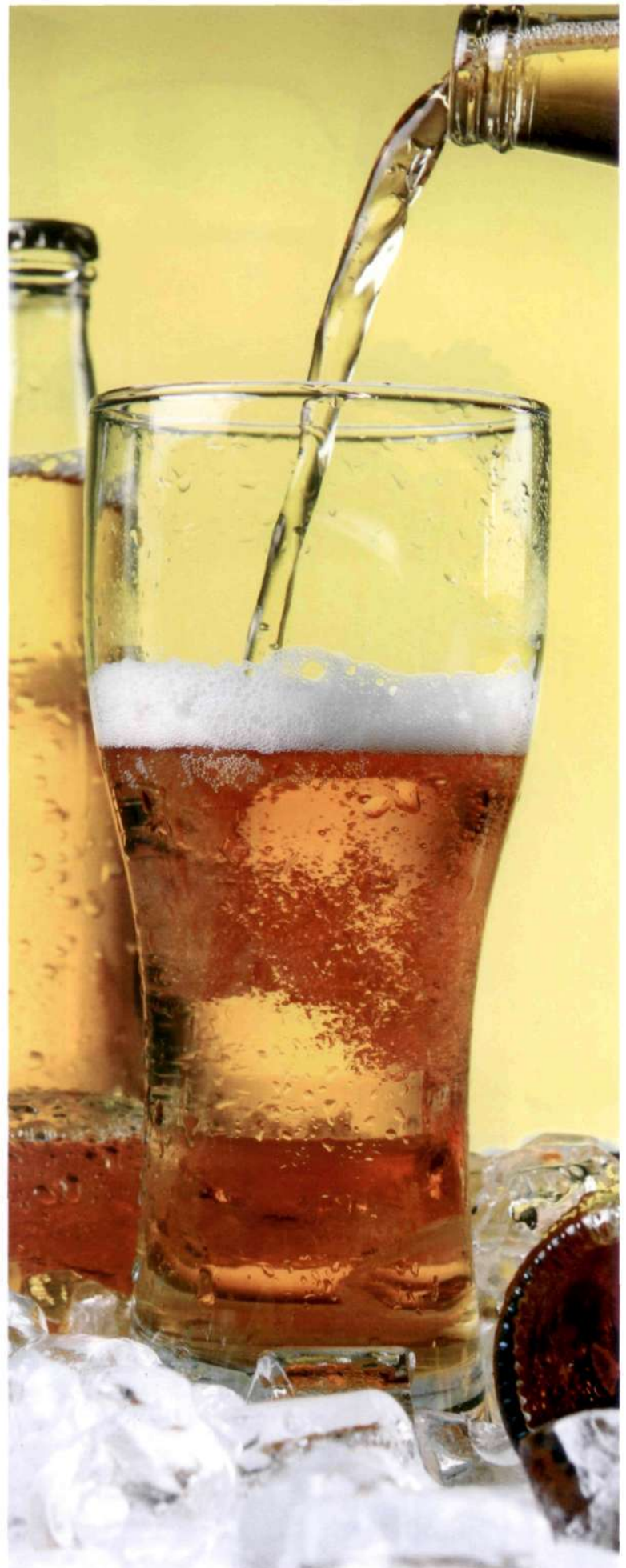
The earliest mentions of beer in Russia date back to the beginning of the 17th century. One of the birchbark manuscripts, found during archeological diggings of the Ancient Novgorod, gives the reference to a heady beverage - «overcook» - prepared from honey and beer. The overcook served as token money to pay tribute to the landowners. Peasants used to present it as usually as malt and hops.

In the tsar's decrees, beer was first mentioned during the reign of Ivan III (1462- 1505). The Great Tsar prohibited that everyone, who felt like doing it, brewed beer. From that moment on, only the tsar breweries could produce this beverage. Later the decree was canceled.

The first brewing factory in Russia was founded in 1795 in St. Petersburg by Abraham Friedrich Krohn in the epoch of Catherine the Great. But still there wasn't any particular strict recipe of the beverage. The first standard on beer (OST 61-27) was approved only by the Soviet Government in January 1928. According to the all-Union standard, beer could be brewed to reach four grades: «Light beer №1» had well-defined hops flavor; «Light beer №2» combined malt and hop flavors; «Dark beer» was characterized by a particular malt flavor, and «Black Beer» had only 1% alcohol content. In the following years the standard was regularly amplified with new sorts of beer.

The disintegration of the Soviet Union actually daunted the brewing industry. Many factories went bankrupt and were closed. Only at the beginning of the 90-s foreign investors arrived to give much-needed second wind. That was the time when some enterprises were purchased, while the others started to work by western technologies.

Today in Russia there are more than 700 breweries, and only 40 of them are classified as large-scale production. As for volumes of production, in the last decade the most productive have been the years 2007 and 2008. In that period more than 11.3 billion liters of beer were produced. After that, the production has been steadily going down. And last year Russia reached as much as only 89 million hectoliters





RUSSIAN BREWERS TODAY

As the President of The National Union of Barley, Malt, Hops, Beer & Non-alcoholic Beverages Producers Alexander Mordovin comments, despite the negative tendency of beer production in all the countries of the Customs Union (the Russian Federation, Kazakhstan and Belarus), the world production of beer has been developing quite consistently recently. Every year the production of beer grows by 2-3% due to contribution of the countries of Southeast Asia, primarily China. At the same time last year Russia took the 32nd place in the global ranking as for beer consumption per capita.

	<i>Volumes of beer production, mln HL</i>	<i>Volumes of beer sales, mln HL</i>	<i>Malt production, thnd tons</i>	<i>Import of brewing malt, thnd tons</i>	<i>Sales of malting barley, thnd tons</i>	<i>Import of malting barley, thnd tons</i>
2008	113,9	113,8	1 394,2	134,4	1 700/ 2 300	172,9
2009	109,1	102,5	1 134,4	70,3	1 000/ 1 500	64,8
2010	98,4	100,4	1 107,1	12,9	650/ 900	12,9
2011	99,4	101,15	970,5	369,1	450/ 700	369,1
2012	97,6 (including 2,4 of beer beverages)	101,75 (without beer cocktails and malted beverages)	1 214	521,9	860/ 1 200	571,7
2013	88,6 (including 5,9 of beer beverages)	100,56 (without beer cocktails and malted beverages)	1 100	267,0	—	267,0

«GRAIN EXPERT» REFERENCE

The National Union of Barley, Malt, Hops, Beer & Non-alcoholic Beverages Producers was founded in 2011. As of today, the Union embraces more than 250 enterprises of the production «barley-malt-hops-kvass-beer» chain.

The activities of the Union are supported by the Ministry of Agriculture of the Russian Federation, branch-specific Committees of the State Duma and the Federation Council, the Eurasian Economic Commission, as well as by the Federal Service «Rosalkogolregulirovanie» and governors of all the regions, producing malting barley, hops and malt.

The Union is engaged in organization of industry's key events: Field Day «Barley, malt, hops and beer of Russia», International Conference «Barley, malt,

hops and beer of Russia», and contests: «Russian best producer of malting barley», «Beer – the star of Russia», «The Russian beer beauty», festivals of national drinks, kvass and beer «Peredelkifest», «Altayfest» and many others.

The Union pays much attention to trainings of companies' representatives. The trips to Germany are organized on the regular basis, with the aim to study modern technologies of production of malting barley, malt, hops and brewing products. The Union shares the contracts of cooperation with social and scientific entities: The German Union of Malting Barley Producers, the German Union of Independent Brewers, the Union of Independent Brewers of Europe, the

Technical University of Munich, the Technical University of Berlin, the Berlin Institute of Brewing, etc.

The Union has authored numerous changes in the Russian legislation: introduction of legal term «independent» and «small & middle» brewing business, creation of expert council under the Federal Service «Rosalkogolregulirovanie», limitations imposed on brewery products' advertising, a ban to grant subsidies to transnational brewing companies at the cost of the national budget of the Russian Federation, restrictions well-secured into the Russian legislation regarding the use of unmalted grain products and sugar-containing components during the production of beer, in 80%:18%:2% proportion.

What is the Russian brewing industry today?

The Russian Federation has developed and has been implementing successfully the production chain of closed type «malting barley - beer», which unites the interests of science, breeders of malting barley, seed multipliers, agricultural producers, traders, representatives of the malting and brewing industries.

The brewing industry has served as a drive to develop production of malting barley in Russia, with gradual pass from using 100% of imported to 100% domestic barley and malt. The programs for cultivating malting barley in Ryazan, Tula, Orel, Belgorod, Kursk, Voronezh, Lipetsk, Omsk regions, as well as in Mordovia, Tatarstan, Altai Krai include



over 300 companies - from peasant-farming enterprises to large agricultural holdings. The cultivated area under malting barley amounts to approx. 1 million hectares.

Russian malting barley is the only national crop that fully meets the most stringent international specifications. Test results of malting barley and malt samples analyzed in the world leading institutions (Berlin Institute of Brewing VLB and Technical University of Munich (faculty of Weihenstephan) give the evidence of its highest quality.

And if malting barley is exclusively produced by Russian companies, malt production implies both Russian («Russian malt», «Baltic Malting Company», «Kursk malt») and transnational enterprises («Suffle», «Cargill», «Malteurop»). In Russia beer manufacturers are divided into independent large-scale («Ochakovo» and «Moscow Brewing Company»), independent medium-scale («Bouquet of Chuvashia», «Lipetskivo», «Vyatich»), independent small-scale («The Fifth ocean», «Yeletsk beer») and craft brewers who often produce beer only for their own restaurants, as well as transnational brewing companies like «CARLSBERG», «ABINBEV», «HEINEKEN», «EFES-SABMILLER», with a big number of significant breweries throughout Russia.

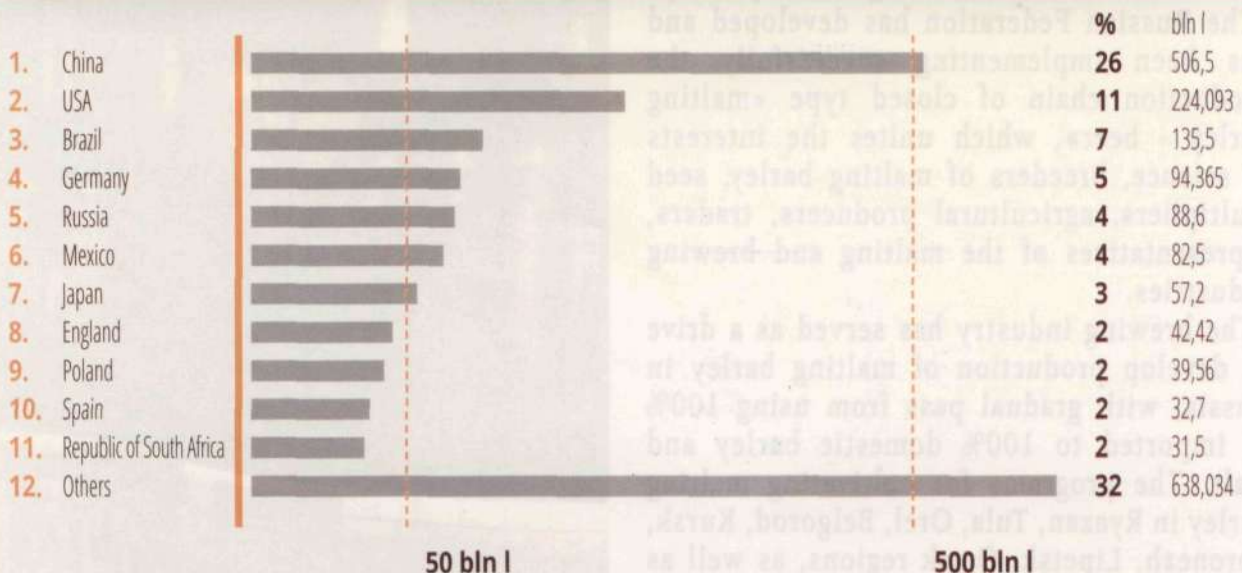
«GRAIN EXPERT» REFERENCE

Transnational company (TNC) is a company that realizes the main part of its operations outside the country where it is registered, often in a number of countries where it has a network of subdivisions, branch offices, enterprises.

By the Encyclopedic Dictionary of Economics and Law.



WORLDWIDE BEER PRODUCTION IN 2013



«There are quite many examples with the situation developing by scenario of strengthening position of transnational brewing companies, - A.N.Mordovin commented. - Already fifty years ago, Germany had more than two thousand breweries, but after the affiliated groups of corporations Holsten and Binding had been extended, only one thousand has remained. In the United States, where there were three thousands of beer producers, now there is also only one thousand left, with 90% of the market share in the hands of three companies. In Venezuela 90% of the market is covered by one single producer, in Colombia - by two, in Argentina and Brazil - by three for each of the two countries».

The reasons for extension of brewing TNC-s lie on the surface. The very consolidation of producers continues to define the economy of the brewing industry, as it allows to reduce significantly the operating costs, that is highly important at the sight of declining consumption of beer and other alcoholic beverages (and thus, decreasing incomes of the company). The bigger an enterprise is, the cheaper it achieves credits, raw materials, equipment.

But nevertheless there are countries with positive experience. The Republic of Belarus, for example. That is due to the effective state regulation of the industry.

Our country has also made a serious step to support national brewery producers. The senior staff of the National Union of Barley, Malt, Hops, Beer & Non-alcoholic Beverages Producers have achieved to impose a legislative ban on granting subsidies from the regional budgets for transnational brewing enterprises.

GLASS OR TERMOPLASTIC?

Alexander remarks that PET-packaging is still popular with Russian beer devotees. More than half of beer products manufactured in our country are PET-bottled. Thus, the President of the Union considers it reasonable to analyze thoroughly what a PET-packaging ban can lead to. This kind of Resolution will do a badly ill service not only to producers of the «foamy» beverage, but also to the entire agricultural complex of Russia.

Recently glass bottles have been seriously forced out by plastic ones. The price sounds attractive for buyers and producers are caught by the idea that PET-package can be recycled.

And in the meantime the experts of the Federal Institute for Risk Assessment of Germany assess that polyethylene terephthalate (PET-packaging) does not basically bring harmful effects to human health.

However, PET-packaging has its disadvantages as well. As opposed to glass, PET-packaging is not

gas-tight. It takes less time to make PET-packed beverages tasteless and even unfit for consumption, versus glass-packed beverages. That is why the shelf-life of the beverages packed in plastic bottles should be 40% shorter in comparison with the beverages bottled in glass.

Under the incentives implemented by the senior staff of the National Union of Barley, Malt, Hops, Beer & Non-alcoholic Items Producers, the Russian Government took the decision to postpone the issue on the possible limits for the usage of PET-packaging of brewing products.

AS THE «EXPERT» MAGAZINE REPORTED, LAST YEAR IN OUR COUNTRY THERE WERE ABOUT 60 BRANCH OFFICES OF INTERNATIONAL AFFILIATED GROUPS OF CORPORATIONS, WHILE FOUR OF THEM WERE INVOLVED IN BREWING INDUSTRY. THE RUSSIAN MARKET IS ATTRACTIVE TO FOREIGN COMPANIES. IT IS ONE OF THE LARGEST IN THE WORLD (AMONG THE TOP FIVE) AND QUITE PROMISING. BUT THE QUESTION ARISES: DOES THE RUSSIAN MARKET ACTUALLY NEED TNC-S?



HOW TO MAKE BEER

1. THE EQUIPMENT

Most items can be purchased at your local homebrew store



1. Fermenter, usually a food-grade plastic bucket with a tight-fitting lid (more experienced brewers may use a glass carboy)

2. Air lock and stopper to allow carbon dioxide to escape during fermentation while keeping air out

3. Thermometer

4. Racking cane & tubing for transferring beer from one vessel to another

5. Bottles, about 50 12-oz. bottles for each 5-gallon batch, new or reused

6. Bottle filler to transfer beer into bottles

7. Bottle capper, a device that clamps bottle caps on bottles

8. Sanitizing agent & bottle-cleaning brush

9. Kitchen supplies – a stove, large pot, cooking spoon, strainer, measuring cup, can opener, and a cup or bowl

2. THE INGREDIENTS

Beer is made from 4 basic ingredients: barley, water, hops and yeast.

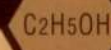
BREWERS YEAST



MALT SUGAR



ALCOHOL



$$CO_2$$

CARBON DIOXIDE

Beer is created when brewers yeast processes malt sugar into alcohol and carbon dioxide.

3. THE BASIC PROCESS

SOURCES: American Homebrewers Association, SoYouWanna.com, Popular Mechanics, Barley Bandits

1. SANITIZING



The most important step. Nothing can spoil a batch of beer faster than stray bacteria.

3. BOILING



Bring wort to a rolling boil and add hops – the flower of the hop plant that gives the beer flavor – according to the recipe.

2. MASHING



Steep grains in hot (but not boiling) water to make wort, a sweet liquid that's basically unfermented beer.

4. FERMENTATION



Chill wort and transfer to fermenter. Pitch yeast. Store beer away from sunlight and wait one to several weeks, depending on the recipe.

5. BOTTLING



You now have beer! But it's flat beer. In order to carbonate it, you must prime it with additional fermentable sugars and bottle it. Then wait at least two weeks.

6. DRINK UP!



ALCOHOL ABUSE RESULTS IN HARM TO YOUR HEALTH

IDEAL PROPORTIONS

With packaging we've got it clear, now it's the turn to talk about the contents. Mr. Mordovin is convinced that beer must contain not less than 80% of malt, and not more than 20% of unmalted grain material and sugar-containing components. This proportion can be considered as a rational and reasonable compromise between the interests of breweries and the industry of malting barley and brewing malt production.

The increase in grain products and sugar components' intake above 20% plainly requires enzymatic agents to be applied. These are proteins that without transformation get into ready products, not intercepted by filters. Unfortunately, their negative impact on the human health has not been fully investigated yet and thus we can't be sure of their harmful usage.

According to investigations delivered by the scientists of All-Russian Scientific Research Institute of Brewing, Non-alcoholic and Wine Industries of the Russian Agricultural Academy, increased content of unmalted raw material



results in steep increment of higher alcohols, ethyl acetate and other fermentation by-products. In the meantime, the share of fermentation by-products in beer with 100% malt content and beer containing 70% of malt and 20% of unmalted materials, is almost the same. The dramatic growth of by-products starts from the proportion composed by 70% of malt and 30% of unmalted materials.

The specialists assure that an ideal beer should include only three ingredients: water, malt derived from barley and hops. Why do some of the brewing companies add sugar-containing ingredients? The only reason is to cut expenses. Sugar-containing ingredients do compensate the lack of sugars, which are usually present in malted grain and involved in fermentation process, essential to produce ethanol. These components



are most commonly used when low quality malt and unmalted grain material are involved in the production process.

RUSSIAN BARLEY FOR CHINA

To what extent do producers estimate the quality of Russian malting barley and malt? Alexander Mordovin is sure that malting barley cultivated in Russia outstrips the foreign one in the majority of quality parameters. And as confirmation serves the «Beijing Programme», developed by the National Union of Barley, Malt, Hops, Beer & Non-alcoholic Beverages Producers jointly with the Ministry of Agriculture, the Ministry of Economic Development and the Ministry of Regional Development of the Russian Federation. This international project was conceived based on the scientific research made by A.N. Mordovin «Vertical coordination of agribusiness – analysis of production and malting barley processing chain in China». At the moment the «Beijing Programme» has been approved for realization by the Russian-Chinese Commission on Organization of Regular Meetings of the Heads of the Governments (decision made at the 16th session of the Commission, dated 1st of November, 2012).

The Programme objective is confined to establish on the territory of the Siberian Federal District a system of large-scale production of malting barley that afterwards will be exported to China and countries of the Shanghai Cooperation Organization.

Results of the «Beijing Programme» in 2012-2013, the complex of macroeconomical, economical and geographical, and political conditions to realize the potential of the Siberian Federal District as one of the main grain exporters to China, multiple mutual visits of delegations, business-forums and «round tables» held in the framework of the project, as well as protocol of intention to purchase Russian malting barley for the needs of the Chinese malting and brewing industries speak clearly for potential

of a big roll-out of the Siberian malting barley (Chinese enterprises account for more than 3 mln tones of yearly malting barley imports) into export markets, which is thought to serve finally as an integrated impulse for agricultural development of the Siberian Federal District.

As provided by the Program, cross-functional high-output linear granaries, terminal elevators and a seed factory will be constructed on the territory of the Siberian Federal District. It is assumed that each elevator will show the simultaneous grain storage capacity as much as 100 000 tons. Along with that, modern flooring in storage facilities allows to receive considerable volumes of malting barley almost of any moisture content and to make all the necessary conditioning with no loss in quality.

That means, the «Beijing Programme» will eventually turn into the global incentive for agricultural development in the Siberian Federal District.

PERSPECTIVES

«Once founded the National Union of Barley, Malt, Hops, Beer & Non-alcoholic Beverages Producers, we implemented the «Rule of Three» - Alexander Mordovin commented. – This stands for the culture of consumption, quality of products and governmental control. If we judge by the results, the rule does really work.

As for plans for the future, Mr. Mordovin mentioned that the Union is planning to participate in elaboration of programs for the development and growth of competitive performance of national producers of malting barley, hops, malt, kvass and beer. This is carried out not only by the brewing industry experts but also by those with a fancy for the Russian beer, who make choice for the national beer production, for beer produced by traditional technologies, i.e. from malt, hops and water.

Yaromir TISHINSKIY



EXPERT ESTIMATION

In 2013 malting barley gross yield in Russia was slightly above 3 million tons. But should we talk about quantity when it's all about quality?



In 2013 specialists of FSFI “Centre for Grain Quality Assurance” analyzed 1,7 million tons of malting barley, which represented 55,4% of actual gross grain harvest. Monitoring results revealed that only 0,2 million tons (11,8% of the analyzed amount) referred to the first class. The second class was comprised of 0,5 million tons (28,2%). The rest of the analyzed malting barley, amounting 1 million tons (60,0%), was considered as non-compliant with the state standard and non-appropriate for brewing.

In the Central Federal District, i.e. in Belgorod, Voronezh, Kursk, Lipetsk, Oryel, Ryazan, Tambov regions, 1,6 million tons of malting barley (55,1% of the gross yield) was analyzed. It was determined that 12,2% of the tested grain corresponded to the first class, 27,0% to the second class and 60,8% was found inconsistent with the GOST requirements.

In the Volga Federal District, the Penza Region, the analyzed malting barley amounted 0,05 million tons, equaled to 67,4% of the gross yield. The test results showed that the 1st class malting barley was not identified, the 2nd class totaled 65,2% and 34,8% was inconsistent with the GOST requirements.

Yury CHISTYAKOV