

## BOLNISI

### AO WINE PRODUCTION SPECIFICATION

**APPLICATION №** 1533/06

**DATE OF APPLICATION:** 2018/07/19

**AO:** "BOLNISI"

**NAME OF GOOD FOR WHICH REGISTRATION IS REQUIRED:** Wine

**NAME OF APPLICANT AND ADDRESS:** NNLE – Bolnisi wine

44, David Aghmashenebeli Str., Bolnisi, Georgia

#### 1. PROTECTED NAME: "BOLNISI"

#### 2. ADDITIONAL SIGNS

#### 3. TYPE, COLOR AND MAIN REQUIREMENTS

"BOLNISI" – is as white, amber, red or rose dry wine.

**"BOLNISI" WHITE** shall meet the following requirements:

- Color – light amber;
- Aroma and taste – perfect, delicate, soft, harmonic, joyful, exquisite, has a grade aroma typical to this geographical place, characterizes by its flower tones and the aging process enriches the sharp bouquet with fruit tones.
- Actual alcoholic strength by volume – no less than 11%;
- Received extract mass concentration – no less than 16 g/l;
- Sugar – no more than 4 g/l;
- Titrated acidity – no less than 4 g/l;
- Other characteristics shall meet the requirements set out by the Georgian Legislation.

**"BOLNISI" RED** shall meet the following requirements:

- Color – dark red;
- Aroma and taste – perfect, full, masculine, extracted, velvet, harmonic, has a grade aroma typical to this geographical place and the aging process enriches sharp bouquet with fruit tones.
- Actual alcoholic strength by volume – no less than 11%;
- Received extract mass concentration – no less than 22 g/l;
- Sugar – no more than 4 g/l;
- Titrated acidity – no less than 4 g/l;
- Other characteristics shall meet the requirements set out by the Georgian Legislation

**"BOLNISI" ROSE** shall meet the following requirements:

- Color – pink;
- Aroma and taste – perfect, delicate, soft, harmonic, joyful, exquisite, has a grade aroma typical to this geographical place and characterizes by its flower tones.
- Actual alcoholic strength by volume – no less than 11%;
- Received extract mass concentration – no less than 16 g/l;
- Sugar – no more than 4 g/l;
- Titrated acidity – no less than 4 g/l;

- Other characteristics shall meet the requirements set out by the Georgian Legislation

**"BOLNISI" AMBER** shall meet the following requirement:

- Color – from dark amber to color of black tea;
- Aroma and taste – complex, has a grade aroma with sharp fruit tones; has body, energetical, extracted, velvet, with well developed bouquet; typical with its acidity.
- Actual alcoholic strength by volume – no less than 12%;
- Received extract mass concentration – no less than 22 g/l;
- Sugar – no more than 4 g/l;
- Titrated acidity – no less than 4 g/l;
- Other characteristics shall meet the requirements set out by the Georgian Legislation

#### **4. GEOGRAPHICAL AREA AND ZONES OF PRODUCTION:**

The micro-zone Bolnisi is situated in the South part of Kvemo Kartli, Municipality of Bolnisi, on 570 m above sea level, in the bassins of rivers Mashavera and Khrami; it covers large area placed between the North latitude 40° 10' – 41° 45' and the East longitude 43° 28' – 44° 45'; On the East side it is bordered with Kvemo Kartli flat (Marneuli), on the Westside – with Janakheti volcanic plateau (Dmanisi), on the the Northside – with Khrami Valley (Tetrtskaro), and on the the Southside with the Loki Ridge (mountainy area of Armenia).

Microzone Bolnisi covers the City of Bolnisi and the following villages: Ratevani, Khatisopeli, Rachisubani, Savaneti, Talaveri, Kvemo Arkevani, Samtredo, Chapala, Zvareti, Bolnisi village, Kveshi, Mushevani, Akaurta, Disveli, Kvemo Bolnisi, Samtsevrissi, Nakhiduri, Tsurtaivi, Parizi, small town Tamarisi, Vanati, Kianeti, and Mamkhuti.

#### **5. VINE VARIETIES:**

"BOLNISI" white and amber Wines shall be produced from only the following grape varieties, grown in the Bolnisi microzone: Rkatsiteli, Chinuri and Goruli Mtsvane (green)

"BOLNISI" red shall be produced from only the following grape varieties, grows in the Bolnisi microzone: Saperavi, Tavkveri, Shavkapito, and Asuretuli Shavi (black).

"BOLNISI" rose shall be produced from only the processed colored-grape varieties, grown in the Bolnisi microzone, either from white must fermented on red grapes squash, or from white and red wines mixes.

No other vine varieties, except above listed, are allowed for the production of « BOLNISI » wines.

#### **6. VITICULTURE, SHAPE OF PRUNING AND CARE:**

- Vineyards for "BOLNISI" winemaking shall be positioned on 500-800 m above sea level;
- Density between the rows in the vineyards – 1.8 -2.5 m;
- Density between the vines in the row – 1-1.5 m;
- Height of stem – 0.5-0.8 cm;
- Shape of pruning – one-sided or Georgian two-sided, one-sided or two-sided cordon, and free.

Vine cultivation, shape and pruning processes, pests and diseases control, and soil treatment, fertilization, and other operations, shall be provided according to agro-technical activities selected by wine-maker.

#### **7. GRAPE RIPENESS, VINTAGE, TRANSPORTATION**

- "BOLNISI" wine shall be produced only with ripe grapes. Sugar content for white, red and amber shall be no less than 20% and for rose – no less than 19%, at the vintage;
- Grapes transportation is allowed only with wood or plastic boxes, with bodyworks made of stainless steel or painted with especial colour;
- Usage of polyethylene packages and/or bags is prohibited;
- The grapes shall be protected from dirtying at the stage of transportation.

#### **8. VINTAGE- AND WINE HARVESTS:**

Vintage harvest on 1 ha vineyard shall be no more than 10 tonnes;

Wine harvest shall be no more than:

- 650 liter – from 1 tonne grapes;
- 6500 liter – from 1 ha vineyard.

## 9. GRAPE PROCESSING, WINEMAKING AND BOTTLING:

Grapes for "BOLNISI" **winemaking** shall be only originated from the Bolnisi micro-zone vineyards.

Grapes processing and winemaking operations shall be provided exclusively within the BOLNISI delimited microzone, however the bottling process is allowed outside the said micro-zone, i.e. in the whole territory of Georgia.

Only sober and ripe grapes shall be used for "BOLNISI" winemaking, and damage ration shall not be more than 5%.

"BOLNISI" is produced by full alcoholic fermentation of must or squash. All the allowed materials and substances for "BOLNISI" winemaking, are set out by the Georgian Legislation.

## 10. LINK BETWEEN EXCLUSIVE QUALITY, REPUTATION AND GEOGRAPHICAL AREA: CLIMATE

The region is characterized with moderately cold winter and hot summer. Slopes (Ketuchi, Sansara and Loki) situated on the West and the South from valley, prevent warm and humid air mass spread from West to South. Concerning the Trialeti slope, it borders the territory from the North and the Northwest.

Kvemo Kartli, particularly the territory of Bolnisi is surrounded by mountains on three sides, due to the influence of atmospherical processes, but because of the local conditions, the processes are changing and forming local special climate.

Based on meteorological years' statistical data of the region, annual average temperature is 12°C. The average temperature in the beginning of February is above zero and it reaches up to 5.9°C in March, and it reaches its maximum in July. The warmest months are July and August; average monthly temperature is 23.6–23.3°C. The coldest month is January and it is characterized with below zero degrees (-0.3°C). The frosts are unstable. First frosts appear from 12<sup>th</sup> of November and end by 4<sup>th</sup> of April. Frosty period lasts for 120–144 days, and not frosty days reach a numbers of 210–221 days per year.

A table

Meteorological station	Air temperature	Months											
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Bolnisi	Absolute minimum	-24	-21	-15	-5	-1	5	7	7	-1	-6	-8	-20
	Absolute maximum	19	22	28	32	33	36	38	39	36	37	32	24

Sediment annual index in the territory of Bolnisi is 700 mm. Winter is snowy, but the snow is usually unsteady.

The snow starts to fall in December and may end for the first half of March. Based on previous years data, average depth of snow is 6 cm.

Absolute minimum temperature caused from the arctic masses of the region, flow from the East and the West (see the table).

Absolute maximum temperature is quite high in summer (36-39°C).

Sediment index reaches its maximum in May and June (80-86 mm), and minimum in December and January (20-25 mm).

Due to low sediment index (152-166 mm) in cold period, and its 28-29% of annual sum, the soil is not sufficiently humid; but in the spring, sediment sum is higher (183-196 mm) so as to have positive influence on grape quality.

**SOIL** – quite complex relief, soil forming variety of rocks, climate conditions, flora and human activity create soil diversity of Kvemo Kartli South part.

Based on the researchers and existed data the Bolnisi soil map is created with 1:50000 scale; wherein, accordingly physico-geographical conditions and genesical data the mountain-glade, grey, woody brown, black, chestnut (grey-brown) and glade alluvial soils deviding in varieties and categories in accordance with soil-making process, thikness, mechanical content, grade of erosion, etc.

Highdiversity of mezzo and micro relief shapes, appropriate on middle mountain, foothills and flat relief type background, plays majorrole as on soil formation processes as on use of soil inagriculture.

Glade brown and alluvial soils 1212 ha area is appropriated on I and II terraces of the river Mashavera Valley.

Glade brown soils are spreaded on the territory of village Ratevani, on right bank of the river Mashavera.

Glade alluvial soils are spreaded on the banks of the river Mashavera and Bolnisi waters, on the conditions of the flat and a little inclined relief.

Said soils are prospect and providing desirable solid stock for viticulture development. It is possible to treat 2000 ha area to plant vineyards in the micro-zone.

Subregional territory includes 8 188 ha area, that proceeds Kvemo Kartli flat. The soils are spread on both banks of the river Mashavera, mainly on flat and light sloped areas in the villages: Nakhiduri, Chapala, Savaneti, Kvemo Archevani, talavera and city Bolnisi territory.

Soil resources and actions provided with appropriate agro-rules are a foundation for the best quality grape production.

Pursuant to executed researches, soil specifications represented in the micro-zone are one of main factor for wine "BOLNISI" production.

**HUMAN FACTOR** – scientifically justified and known from historical materials, that Georgia is one of the first countries, where already in Neolithic era, human transformed wild vine in "cultural" -, "domestic" one,; Georgia, includingBolnisi regionhas a history of continuous link with 8000 years old winemaking culture, prooved by archeological (clay qvevri-s (wine jar), gold and silver bowls) and ethnographic materials, writings, terminologies and songs.

The viticulture had a significant role in ancient Georgian economy and the nation's well-being. It had a major place in foreign trade, as Georgian wine had always been the product to export. It was mentioned by academician Ivane Javakhishvili in V volume of his works on Georgian and Bolnisi region viticulture history and traditions.The high professional level of Georgian ancient viticulture and winemaking culture is mentioned in ornamental artistic works, culture monuments, ethnographic and literary sources, folk stories and customes of Bolnisi region.

The grape seeds were discovered during the archeological exavations in Bolnisi on Arukhllo ruins, belonging to VI millennium B.C. and cellars of IV-III millennium B.C. were discovered in Bolnisi, nearby territories and Borjomi region, as well as wine storage clay jar – qvevri-s, having double layered walls for wine thermal treatment -one of unique worldwide event.

Iv. Javakhishvili in his twelve volume work often mentions winemaking in Bolnisi region and gives us wide information about wine names, Appellation of Origin, and characteristics, particularly:

- From typicon fragment of IX-X centuries monaster situated nearby Bolnisi is seen that at monaster farm wine made of "babilo" (grape alley) was kept separately in "babilo tchuri" (wine jar). Same fragment indicates that back to times of Queen Tamar the grapes – white, green and dark-red were picked and pressed separately in Bolnisi; in accordance with Giorgi Mtatsmindeli, wines produced in Bolnisi were divided in 3 categories: "light-", "moderate-" and "the best wine" – "nobel wine".
- In XIII-XIV centuries, due to Mongolian, Persian and Ottoman systematic invasions and wars, population of Bolnisi has been exterminated or migrated. In accordance of Armenian historical sources, there were spread Saperavi and green grapes during that period.
- From the beginning of XVII century, in 1619-1620 the Orbeliani's Nobel family recorded amount of vineries and yield.

Based on figures; it's seen that in 1619, they made 778 "sapalne" wine (1 packet-boat is 6 "puti"- 96 liter), and in 1620 – 808 "sapalne", from the vineries of the villages: Mukhrana, Balakhauri, Shua Bolnisi, Tsughrughasheni, Kvemo Bolnisi, Chapala, Potskhveriani, Disveli and Zvareti.

At 1818, Schwab colonists from German Empire arrived in Bolnisi, they helped viticulture-winemaking further development. Not having the traditional knowledge of winemaking, but being hardworking, they learned from local population the winemaking processed and cultivated Muscate, Malera and Isabella varieties with the help of Viceroy - Count Vorontsov. They also cultivated Rkatsiteli, Saperavi, Aligote, Gurula, etc. high quality vine varieties, as mentioned German colonist Ernst Allmendinger at his book "Katharinenfeld, ein deutsches Dorf im Kaukasus", 1818-1941. He has mentioned in the book, that in Katherine Feld (nowadays – Bolnisi) viticulture was so developed, that population (814 families) couldn't take yield and treat so great amount of grapes, and they created winemakers cooperation "Union" and at 1908, built winery with its unique wine cellars, basements and infrastructure, where they produced wine, brandy and vodka, and sold in Tbilisi, in their own six wine shops. Besides Tbilisi they transported wine in various sides of Georgia, cities of Empire of Russia, and their wine "Caucasian Red" was annually sent to Emperor of Russia.

After I World War, winemaking was increased at "Union", accordingly – financial incomes and their industry became one of the greatest between Georgian winemaking.

In the 1920s, Bolnisi vinery produced 32-35 000 tons of grapes and bottled millions of bottles of wine, for which the vessels were made from glass in the enterprise of Baron Von Kuechenbach. At the time in Katharinenfeld and nearby villages 20-22 tons of grapes per ha were harvested, since the distance between rows were 1 m, and in 100m row 90-95 vine were planted.

It is important to mention German vinemakers role in revive of aborigen variety – Asuretuli, with which was produced dry red wine.

In the 1950-70-s, viticulture played significant role for Bolnisi economy, renovated German vinemakers vineyards, was created Soviet vineyards, in Bolnisi and the villages nearby: Ratevani, Kveshi, Nakhiduri, Mamkhuti, Tsurtavi, Savaneti, Chapala, Kvemo Bolnisi, wherein were produced 14-17 000 tons of grapes; and produced therefrom wine material, portwein, wine alcohol, and grape juice were sent to various regions of Soviet Union.

Nowadays in Bolnisi, well functioning winery built by Germans, produces high quality wine alcohol and sells in EU countries.

Viticulture cooperative "Union" and winery Heads were: Emmanuel Almendiger (1908–1918), Ernst Almendiger (1918–1930), Rudolph Huttenlocher (1900–1941), Petre Sokhadze (1941–1944), Ivane Kakhidze (1944–1950), Pavle Orjonikidze (1950–1952), Archil Kobiashvili (1952–1954), Dimitri Javelidze (1954–1964), Nariman Dolidze (1964–1972), Jimsher Kurashvili (1972–1975), Bidzina Javelidze (1975–2015), and from 2015 – Gia Loladze.

Geographical location of micro-zone Bolnisi, climate with moderately cold winter and hot summer, moderate amount of atmospheric sediments, soils diversity, Rkatsiteli, Chinuri, Goruli Mtsvane, Saperavi, Tavkveri, Shavkapito, and Asuretuli Shavi – vine varieties, especial characteristics of the micro-zone, and local tradition of viticulture and winemaking provides organoleptic characteristic specifying only for the wine "BOLNISI".

## 11. LABELING SPECIAL RULES:

Name "BOLNISI" and sign – PDO (Protected Designation of Origin) on the label, package, in the wine accompanying documents, and advertising materials, as well, used in foreign languages, looks as follows:

With Latin font – "**Bolnisi**" or "**Bolnisi Wine**"

Protected Designation of Origin and/or PDO

Cyrillic font – "**Болниси**" or "**Болнисское Вино**"

Защищённое наименование места происхождения

## 12. ACCOUNTING AND NOTIFICATION

"BOLNISI" production and storage technological processes accounting and notification is provided in accordance to the rules set out by the Georgian Legislation.

## 13. MAIN CONTROLLABLE POINTS:

At the control point of PDO "BOLNISI" winemaking process, the producer shall meet the requirements established by LEPL Wine National Agency, and shall comply with following parameters:

<b>Main Controllable Points</b>	<b>Evaluation Methods</b>
Vineyard location	Cadaster map, control on the place
Area	Vineyard accounting magazine, cadaster
Vine variety	Vineyard accounting journal, control on the place
Cultivation methods	Journal of registration of Agrotechnical Measures, treating journal, control on the place
Vintage and transportation	Vintage journal
Grape heritage on ha	Vintage journal
Grape heritage in whole	Vintage journal
Grape processing place, processing and winemaking	Grape receiving journal, grape processing journal, product turnover calculation journal, laboratory analysis journals, notifications, control on the place
Wine bottling, packe and storage conditions	Bottling journal, journal for ready product motion in the storage, laboratory analysis journals
Wine physical-chemical characteristics at winemaking, before and after bottling	Laboratory analysis journals
Wine organoleptic characteristics	Degustation commission protocols
Traceability	Technological and Laboratory Records

#### **14. CONTROL BODY OF WINEMAKING:**

According to the rules set out by Georgian Legislation, the LEPL Wine National Agency is the competent body responsible for PDO official control and monitor processes.

#### **Microzone Bolnisi**

