KARDENAKHI

NUMBER OF REGISTRATION: 795

DATE OF REGISTRATION: 10/12/2007

APPELLATION OF ORIGIN: KARDENAKHI

GOOD FOR WHICH REGISTRATION IS REQUIRED: Wine

NAME AND ADDRESS OF APPLICANT: LEPL - National Wine Agency; Marshal Gelovani Av. 6, 0159, Georgia, Tbilisi

1. NAME: "KARDENAKHI"

2. ADDITIONAL SIGNS:

3. TYPE, COLOR AND MAIN REQUIREMENTS:

Wine "Kardenakhi" can be amber sec (dry) or white fortified wine.

"Kardenakhi" amber sec (dry) shall satisfy the following requirements:

- Color – dark amber to straw;
- Aroma and taste – with body, energetic, extracted, velvet, having aroma characterizing the location, moderately and softly spicy making it typical, fruit tones are developed with aging;
- Volumetric spirit content – no less than 12 %;
- Concentration of finished extract mass – no less than 22 g/l;
- Sugar content – no more than 4 g/l;
- Titrated/ Volatile acidity – no less than 5 g/l;
- Other characteristics shall meet requirements provided by the legislation of Georgia.

"Kardenakhi" white fortified shall satisfy the following requirements:

- Color – light golden to dark amber;
- Aroma and taste – full, harmonic, having aroma characterizing the location, taste of honey;
- Volumetric spirit content – no less than 18 (± 0,5) %;
- Concentration of finished extract mass – no less than 18 g/l;
- Sugar content – no more than 10 (± 0,5) g/l;
- Titrated/ Volatile acidity – no less than 4 g/l;
- Other characteristics shall meet requirements provided by the legislation of Georgia.

4. SPECIFIC ZONE AVAILABLE AREAS

The micro-zone Kardenakhi is located in Gurjaani region, on administrative territory of the village Kardenakhi, inclined on the 3-4° lower exposition of Tsiv-Gombori Range North-Eastern slopes, on the right bank of the River Alazani, on the coordinates – 41° 48' of Northern longitude and 45° 44' of Eastern latitude, at 350-750 m above sea level. The plots are placed between the Alazani channel and the highway, between the administrative borders of villages: Bakurtsikhe and Anagi.

5. VINE VARIETIES

Wine "Kardenakhi" shall be prepared from the grapes of Rkatsiteli, the vintage takes place in the micro-zone Kardenakhi. It is permitted to use about 15% of Kakhuri Mtsvane and Khikhvi, vintage takes place in the same micro-zone.

6. VINEYARD CULTIVATION, SHAPE OF PRUNING AND CARE

The micro-zone Kardenakhi vineyards for wine "Kardenakhi" shall be situated on 350-750 m above sea level.

- Distance between the rows in the vineyards – 1-3 m;
- Distance between the vines in the row – 0.8-1.5 m;
- Height of stem – 60-90 cm;
- Shape of pruning – one-sided or Georgian two-sided or free.

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

7. GRAPE MATURITY, VINTAGE, TRANSPORTATION:

- "Kardenakhi" shall be produced only with ripe grapes.
- Sugar content shall be no less than 20%, at the vintage.
- Grapes transportation is permitted only with wooden or plastic boxes, with bodyworks made of stainless steel or painted with special colour.
- Usage of polyethylene packages and/or bags is not allowed.
- The grapes shall be protected from dirtying at the transportation.

8. VINTAGE AND WINE PRODUCTION

Vintage on 1 ha vineyard shall be:

- 10 tons for Rkatsiteli;
- 8 tons for Kakhuri Mtsvane.

Wine production shall be no more than:

- 650 liters – from 1 ton grapes;

- 6500 liters – from 1 ha vineyard for Rkatsiteli;
- 5200 liters – from 1 ha vineyard for Kakhuri Mtsvane.

9. GRAPE PROCESSING, WINEMAKING AND BOTTLING

Grapes Rkatsiteli and Kakhuri Mtsvane for producing wine "Kardenakhi" shall be only from the vineyards cultivated in the micro-zone Kardenakhi.

Grapes processing and winemaking shall be provided exclusively inside of Kakheti, bottling is permitted outside Kakheti, but only on the territory of Georgia.

At the same time, the grapes can be got from the micro-zone Kardenakhi and the wine can be withdrawn from Kakheti viticulture zone only under strict accounting and control.

"Kardenakhi" amber is made by alcoholic fermentation of must (“chacha” with whole quantity of vine stoves), exceptionally in the qvevri (wine jar). After fermentation the qvevri is filled with the same wine and stayed on the must until 1 February of the next year.

"Kardenakhi" white fortified is made by adding of grape spirit on fermenting must or grape juice. At the production or blending it is permissible to add therein grape spirit, dry wine, grape juice with 16% spirit, grape juice, or its concentrate.

Grape alcohol, dry wine, grape juice preserved in alcohol, grape juice or concentrate thereof usage is permissible at fortified "Kardenakhi" production and blending.

"Kardenakhi" shall be represented on consumer market only packed in the consumer vessels.

10. LINK BETWEEN EXCLUSIVE QUALITY, REPUTATION AND GEOGRAPHICAL AREA

CLIMATE – The formation of weather in the micro-zone is caused by atmospheric processes developed in subtropical and moderate areas and moved from the East and West longitudes. The climate in the micro-zone is moderately humid, with hot summer and mild winter. The direction of Alazani Gorge has great importance. Cold air masses move from the North-West to South-East on the foothills of the Northwest slopes of Tsiv-Gombori Range and the gorges, from high tops of Kakheti Caucasus glaciers.

Annual duration of sunshine in the micro-zone Kardenakhi is 2154 hours. During the vegetation period the sunshine duration is 1589 hours.

The average annual air temperature of the micro-zone is – +12,5°C, the coldest month is January – +1,0°C, of the warmest months - July and August are closer to each other and is +23.6°C.

Air temperature average annual absolute minimum is -10°C, and once in 10 years can fall to –15°C.

Air temperature average annual absolute maximum is +35°C, absolute maximum is +38°C.

Sustainable transition to the average daily temperature of 10°C (the start of active vine vegetation period) began from 5.IV and falling down – in the autumn (3.XI). The period of average daily temperature above 10°C continues 211 days. The sum of active temperatures is 3920°C during this period.

The annual sum of atmospheric precipitations is 770 mm, and 585 mm – 76% of annual amount during the vegetation period. Maximum of precipitations can be in May (132 mm) and minimum in January (31). The precipitations distribution in accordance of seasons is following: the most of them (32-32%) occurs in the spring and summer, relatively less – in the autumn (23%) and winter (13%).

Annual relative air humidity is 72%, and 70% in the vegetation period. Relative humidity reaches its maximum in the end of autumn (80%) and first half of winter (78-76%), relatively less – in the summer (July and August).

The snow cover is created in the mid-December, melting – in the first decade of March. The number of snowy days is 24 in average, per year, in most years snow cover is unsustainable.

First frosts are begun from 25 November. Once in 10 years it may take place at the end of October, which doesn't damage green organs of vine. The last frosts of spring are stopped in the last decade of March, and may be continued till 15 April once in 10 years.

The micro-zone is located in high intensity hailing zone. The number of hailing days is equal to 2.9, per year. Hail during the year is more frequent in May-June (2,1 days). In some years it is possible to be 5-6 hailing days.

There is mostly prevailing the South-Western (33%) and Western (18%) winds. Other direction winds have less repetition.

The average annual wind speed is 1,7 m/s, in the specific zone, and doesn't exceed this index as in warm period of year, as in cold.

Strong windy days amount in specific zone is small. According to the strength of winds, this part of Alazani Gorge belongs to the III group.

According to the average multi-year data, the average annual air temperature is 10°C. Once in 10 years, falling of temperature bellow 15°C is expected only in short duration.

On the soil surface, which is humus-carbonated, the average annual temperature is 15 ° C. In the July-August the average surface temperature is the highest and reaches 30°C. In the coldest month – January it is no less than 0°C. The average maximum temperature in August is 52°C and in July – 53°C, the average minimum temperature in winter months is between -3 – - 5°C.

The total number of cloudy days (8-10 points) per year is approximately 110-120. Annual number of cloudy days in the cold period (XI-III) during five months is 59, and in the warm period (IV-X) – i.e. per seven months is 61. During the year cloudy days are less (5-6 days) in the July-August, and more (10-12 days) in March-April. The total number of clear days (0-2 points) according to common cloudy days is 45. Clear days are mostly from July to September.

SOIL – Soil producing rocks are consisted with deluvial-proluvial carbonated loamy-clay and stony layers. The area is about 345 hectares. There are 11 types of brown and 1 of deluvial soils.

First variety of soil is brown, very thick, clay in the North part of the plot "Guli Tsarapi". Profile thickness is 90-100 cm and of humus layer is 75-75 cm.

Second variety of soil is brown, very thick, somewhere leptosol and stony, light clay is presented on the most Western part of the plot "Guli Tsarapi" and as small contours – in the plot "Akhoebi". Profile thickness is 95-105 cm and of humus layer is 70-80 cm.

The 3rd variety of soil is brown, very thick, superficially slightly leptosol and light clay is represented as several contours of the plot "Guli Tsarapi". Profile thickness is 90-100 cm and of humus layer is 65-75 cm.

The 4th variety of soil is brown, very thick, superficially slightly leptosol and stony, heavy loamy and light clay are presented as several contours of the plot "Guli Tsarapi" and in the middle of plot "Akhoebi", in its large area. Profile thickness is 85-95 cm, and of humus layer is 70-80 cm.

The 5th variety of soil is brown, very thick, slightly leptosol, stony, and light clay are presented in all plots as small contours. Profile thickness is 80-90 cm, and of humus layer is 60-70 cm. Stone content is 3%.

The 6th variety of soil is brown, very thick, slightly leptosol and slightly stony, heavy loamy and light clay are presented in the middle line of plot "Akhoebi". Profile thickness is 85-95 cm, and of humus layer is 60-70 cm.

The 7th variety of soil is brown, very thick, moderately leptosol and stony, heavy loamy and light clay are presented in the small part of the plot "Guli Tsarapi". Profile thickness is 90-100 cm, and of humus layer is 50-60 cm, 5-20 cm diameters stone content is 20%.

The 8th variety of soil is brown, moderately and very thick, somewhere slightly leptosol, heavy loamy and light clay are presented in the West and East parts of plot "Akhoebi". Profile thickness is 60-80 cm, and of humus layer is 50-60 cm.

The 9th variety of soil is brown, moderately and very thick, slightly leptosol and stony, heavy loamy and light clay are presented in the middle part of plot "Akhoebi". Profile thickness is 60-90 cm, and of humus layer is 50-60 cm.

The 10th variety of soil is brown, moderately thick, moderately leptosol and slightly stony, heavy loamy are presented in the North and South parts of the plot “Akhoebi”. Profile thickness is 60-80 cm, and of humus layer is 50-60 cm. Stone content is 4%.

The 11th variety of soil is brown, moderately thick, moderately leptosol and stony, heavy loamy and light clay are presented in the South part of the plot “Guli Tsarapi”. Profile thickness is 60-70 cm, and of humus layer is 50-60 cm.

The 12th variety of soil is deluvial, very thick, moderate leptosol and slightly stony, heavy loamy are presented in the South part of the plot “Guli Tsarapi”. Profile thickness is 110-120 cm, and of humus layer is 80-90 cm.

Soil mechanical content is mostly loamy and light clay, wherein physical clay (<0.01) fraction varies in wide range and is between 20,0-69,4%. Humus content in the 4th and 5th varieties of soils in trenching layers (0-60 cm) is moderate or small (2,04-4,91%) and of other varieties of soils is small – no more than 2,95%.

Common nitrogen is in small content – 0,067-0,128%, hydrolyzed nitrogen content is high in the 4th and 6th varieties soils all analyzed cuts plough layers (0-25cm) – 10,56-13,89 mg in 100 g soil. In other varieties trenching layers its content is low to 5,00 mg in 100 g soil. Content of soluble phosphorus in all varieties of soils is 3,0-29,0 mg in 100 g soil, and represented as a trace bellow. Changeable potassium content is high – 28, 0-90,4 mg in 100 g soil everywhere in plough layers, and is decreased bellow. Calcium carbonate content in soil profiles varies in wide range, and is increased bellow – 2,0-44,0%. Soil area reaction (pH) is slightly and moderately alkaline – 7,2-8, 2.

HUMAN FACTOR – Winemaking by the Kakhetian technology in qvevri (wine jar) began in Georgia 8 thousand years ago and this tradition is still continuous. The Georgian man has elaborated and improved winemaking methods during this long period. Thus, the main creators of Kakhetian technology winemaking are the Georgian people who not only have created this unique rule, but, figuratively speaking, rather carried it in their bosom and saved it from the vicissitudes of life that befell this little country in the course of time.

Special attention was paid to the Kakhetian method of winemaking in the Soviet period. . In parallel with planting new vineyards and building new wineries, in these wineries powerful qvevri households were created in Shroma, Gurjaani, Kardenakhi, Tsnori, Tibaani, Khashmi, Maiakovski, Zestaponi, etc. In the 1970s the total capacity of qvevri households exceeded 1 680 000 dl.

Thorough research of vine and wine phenolic compounds was conducted by Georgian scientists – Academician S. Durmishidze and Professors M. Bokuchava and G. Beridze. Prof. G. Beridze, Bikenti Siradze, Esma Sesiashvili and other winemaker-scientists made a great contribution to the development and improvement of traditional Kakhetian technology.

Establishing of households based on market economy has changed many things in our country. New vineyards were cultivated with the excellent Georgian varieties, being oppressed in the Soviet times, new technics and technologies have been introduced and our wine production has been represented on totally new markets.

The Georgian traditional method of winemaking in qvevri was granted with the intangible cultural heritage status by the UNESCO in 2013, which indicates the uniqueness of this method and is a message to the whole world that wine is a part of the ancient Georgian culture. It was the crown of recognition of the traditional Georgian winemaking method in qvevri, which gave new stimulus to implement this winemaking method in this country and laid foundation for its introducing onto different European countries.

As regards fortified "Kardenakhi", production of fortified wines never was traditional in Georgia. Their production actually was implemented and developed in the Soviet period (1926). The share of fortified wines in the 1980s was 90% of the total volume of wine production in the USSR, and in Georgia – more than 65%.

It should be mentioned that fortified and dessert wines in Georgia have always been characterized with high quality. Fortified wine "Kardenakhi", which has been produced since 1926, is one of the best among Georgian portweine-type wines; it won 8 gold medals at international competitions, where it was a worthy rival of the famous Portuguese high quality wines.

Geographical location of the micro-zone Kardenakhi, its regional climate: mild winter and hot summer, moderate amount of precipitations, diversity of soils, grape variety special features and local centuries-old tradition of viticulture and winemaking define the high reputation and organoleptic features of wine "Kardenakhi".

11. SPECIAL LABELING RULES

With Latin font – KARDENAKHI

Protected Designation of Origin and/or PDO

Cyrillic font – КАРДЕНАХИ

Защищённое наименование места происхождения

12. ACCOUNTING AND NOTIFICATION

Accounting and notification of production and storage technological processes of "Kardenakhi" is carried out, in accordance with the rules established by the legislation of Georgia.

13. MAIN CONTROLLABLE POINTS

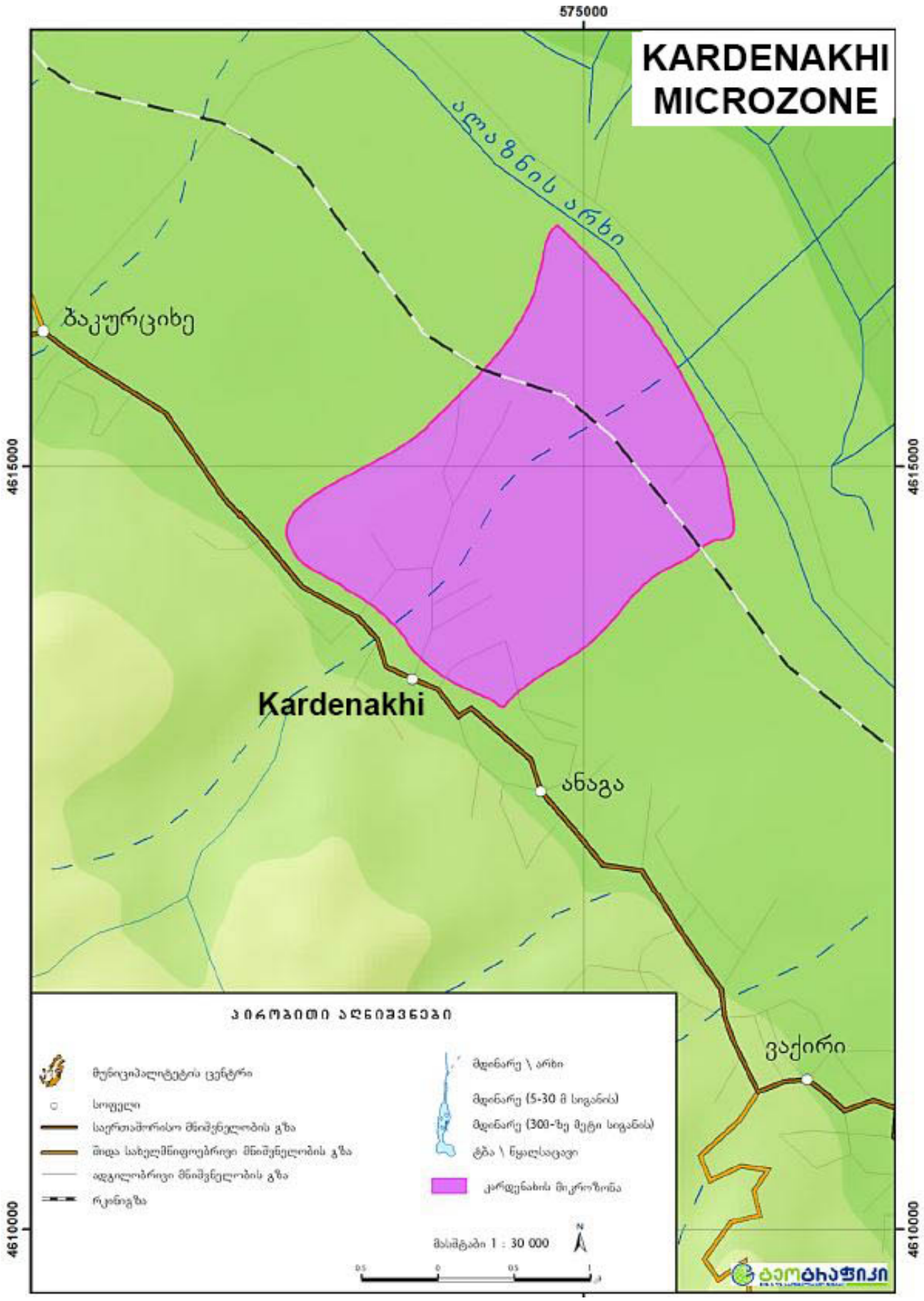
During control of the PDO wine "Kardenakhi" production process the producer shall satisfy the requirements established by LEPL National Wine Agency, and shall comply with the following parameters:

Main Controllable Points	**Evaluation Methods**
1	**2**
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 harvest per ha	Vintage journal
Grape harvest in total	Vintage journal
1	**2**
Grape processing and winemaking	Grape receiving journal, grape processing journal, product turnover calculation journal, laboratory analysis journals, notifications, control on the place
Wine bottling, packaging and storage place and conditions	Bottling journal, journal for motion of ready product in the storehouse, laboratory analysis journals

Physico-chemical characteristics of the wine at winemaking, before and after bottling	Laboratory analysis journals
Organoleptic characteristics of the wine	Tasting commission protocols
Traceability	Technological and laboratory records

14. CONTROL BODY OF PRODUCTION

State control for observance of production specification and lawful usage of the appellation of origin PDO shall be carried out by LEPL National Wine Agency, according to the rules established by the legislation of Georgia.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