“KHVANCHKARA”
WINE OF APPELLATION OF ORIGIN

Production micro-zone of wine “KHVANCHKARA”

Geographical location. The micro-zone of “Khvanchkara” is located in Racha, administrative Region of Ambrolauri, on the southern slopes of Lechkhumi Ridge, on the sloped between the coordinates of northern latitude of 42°30´ and eastern longitude of 43°00´. Industrial vineyards are mainly located at 450-750 m above sea level. The micro-zone spreads along the latitudinal gorge on the right bank of the river Rioni, along 35-40 km, in the pit protected by high ridges. The vineyards are spread on the left bank of the river Rioni, on the northern slope of Racha Ridge.

The micro-zone of the wine “Khvanchkara” includes the villages located in near the village of Khvanchkara: Tsesi, Kvatskhuti, Sadmeli, Gviara, Bostana, Didi Chorjo, Patara Chorjo, Meore Tola, Pirveli Tola, Chrebalo, Chkvishi, Zhoshkha, Kvishari, Gvardia, Bareuli, Gadishi, Baji, Bugeuli, Saketsia, Jvarisa, Itsa, Krikhi, Akhalsopeli, Gori, Khimshi, Abanoeti. In some years, bulk wine of “Khvanchkara” may be produced in the villages of Tsageri Region – Alpana and Orbeli.

Climate. The weather in the micro-zone of “Khvanchkara” is formed by the atmospheric processes developed in subtropical and moderate latitudes and moving from west to east. The climate here is quite damp, with relatively dry hot summer and moderately cold winter.

Production of originally semi-sweet wine “Khvanchkara” is possible due to the principal agro-climatic indicators developed on the foothills of southern inclination of latitudinal direction: solar energy, amount of heat, moderate tension of summer temperature and moderate humidification of the site.

Average annual air temperature is 12,2-10,8°C, with 21-22° in July and August, the hottest months of the year and 0, -1° in the coldest month of January. The average of annual absolute minimums if -14-16°, and the average of annual absolute maximums is 36-37°. Extreme temperatures are -27 and +40°C.

The annual duration of sunshine is 1900-2000 hours, with over 1400 hours during the vegetation period. The total radiation is quite high and amounts to 120-130 kcal/cm^2 a year.

According to the general cloudiness, the number of clear days if compared with that in western Georgian vine-growing regions, is considerably higher what together with other factors has a significant influence on the grape quality.

The first autumn night frosts start in the first decade of November, and the last night frosts in spring end in the first decade of April (5.IV-7.IV). The period with no frost lasts for over 215 days. Once in every 10 years, the late night frosts may last until the end of April endangering the early blossomed vine buds.

“Aleksandrouli” and “Mujuretuli” have their buds blossomed in the middle of April (15.IV), flowered in the first decade of June, and the grape is ripened from the end of the second decade of August.

The grape is technically ripe at the end of September (from 25.IX), and for gaining naturally semi-sweet bulk wine the grape is harvested in the second half of October what needs the sum of active heat of over 3500°.

In the micro-zone of Khvanchkara, at the height of 450-650 m, the sum of active temperatures (Σt >10°) varies within the limits of 3750-3350°. At the height of 600 m, the bulk wine of “Khvanchkara” may be produced once in two years (50%). In other years, we produce dry table vintage wine. The areas at the height of 500 m the sae bulk wine is produced 6 times and 8 times at the height of up to 400 m (75%).

In the zones located above 600 m of height, the bulk wine “Khvanchkara” may be produced in less cases, and namely, at the height of 650-700 m, it is produced once in every 10 years, and bulk wine for quality table wine is produced in other years.

Following the analysis of the differences (sugar content and acidity) of qualitative characteristics of “Aleksandrouli” and “Mujuretuli”, the sugar-content of “Aleksandrouli” is 0,8-1,3% (i.e. ≈ 1%) less an the general acidity is 0,9 gr/dm3 (i.e. ≈ 1 g/dm3) more than the same indicators of “Mujuretuli”.

Annual sum of atmospheric precipitations in the micro-zone is 1050-1100 mm. The distribution of precipitations in various months is almost equal. The amount of precipitations during the vegetation period is 640-660 mm. On the background of moderate humidification of the warm period of the year, in some years, excess of evaporation makes the time period from the moment the flowering ends up to the moment start of ripening dry.

The annual number of days with hail during the vegetation period is 1-2. May and June have most days with hail (0,6-0,8 days each).

Average annual relative air humidity is 75-76%. Air imbibition is the least (68-70%) the second half of summer and is the most (81-84%) in winter. The snow cover appears in the middle of winter and melts until the second half of March. Average height of the snow cover is 15-20 cm.

Rumba winds of eastern (39%) and western (37%) directions prevail along the Rioni gorge. Because the gorge is closed, the wind speed is not high. In some micro-districts (Ambrolauri), the wind speed is amplified by the winds of mountains and gorges. As a result, the speed of winds in Ambrolauri and

other river-side plains is significantly increases reaching 2,0-2,5 m/sec. The wind becomes relatively stronger during the period of spring and summer (2,5-3,1 m/sec).

Soils. The vineyards and areas designated as vineyards to produce the bulk wine “Khvanchkara” are mainly located on the right side of the river Rioni, on the territories of Kvemo Racha and Ambrolauri.

The soil specialists of the Scientific-Research Institute of horticulture, vine-growing and wine-making of Georgia, in the months of June and July of 2005, carried out field and cameral works of soils in the above-listed villages.

Soil analyses were also conducted at the agro-chemical laboratory of the same Institute.

The study was carried out on both sides of the river Rioni, at the altitude of 450-750 m above sea level and the following soil types were identified: three varieties of humic-calcareous, one variety of black soil, one variety of dealluvial-proalluvial soil and one variety of alluvial soil – total six varieties.

The soil of the first variety (humic-calcareous, of great thickness, heavy loamy and light clay) is characterized by the following soil sections: village of Khvanchkara, plot “Satsavi”, 510 m above sea level and beside the plot “Fermis Gverdit (Beside the farm)”, 750 m above sea level, section #23; village of Sadmeli, plot “Kovelebi”, 750 m above sea level, section #14 and plot “Sulmukha”, 540 m above sea level, section #16; village “I Tola”, plot “Bereuli”, 640 m above sea level, section #20; village Chkvishi, plot “Kavrushi”, 615 m above sea level, section #34 and plot “Surguladzis Kari”, 595 m above sea level, section #36.

The soil of second variety (humic-calcareous, of great thickness, skeletal, average clay and heavy loamy soil) is characterized by: village Kvaskhuti, plot “Gurgvala”, 620 m above sea level, section #7; village “Saketsia”, plot “At Jvarisi turning”, 575 m above sea level, section #40; village Bugeuli, plot “Maedani”, 720 m above sea level, section #43; village Abanoeti, plot “Kapianeuli”, 680 m above sea level, section #46; village Gori, plot “Muruzaulebi”, 655 m above sea level, section #42.

The soil of third variety (humic-calcareous, of average thickness, average and light clay) is characterized by: village Chrebalo, plot “Kavrushi”, 750 m above sea level, section #32.

The soil of fourth variety is characterized by: village Tsesi, plot “Gverda”, 640 m above sea level, section #1; village Bostana, plot “Napudzvari”, 700 m

above sea level, section #28; village Chorjo, plot “Karieti”, 695 m above sea level, section #30; village Baji, plot “Khvarakeuli”, 500 m above sea level, section #39; village Ina, plot “Getsadzeebis Venakhi (The Getsadzes’ vineyard)”, 640 m above sea level, section #49.

The soil of fifth variety (dealluvial-proalluvial, of great thickness, skeletal here and there, light clay) is characterized by: village Bugeuli, plot “Chala (Groove)”, 540 m above sea level, section #18; village Khimshi, plot “Didkana”, 575 m above sea level, section #10; village Dzirageuli, plot “Jishta Gamocdis Nakveti (Species examination plot)”, 540 m above sea level, section #12; village Gori, plot “Muruzaulebi”, 655 m above sea level, section #42.

The soil of the sixth variety (alluvial, of great thickness, weakly skeletal and stony here and there, loamy) is spread in the village of Tsesi, plot “Kotes Chala (Kote’s groove)”, 550 m above sea level, section #4.

for gaining the bulk wine “Khvanchkara”, according to soil-climatic and relief factors, the territories of Khvanchkara, Didi and Patara Chorjo, Bostana, Gviara, Sadmeli, Zirageuli, Kvatskhuti, I and II Tola on the right bank of the river Rioni, territory of Chrebalo in Kavruli and the territory of the village of Bugeuli on the left bank of the river Rioni (at 750 m above sea level) are special locations.

The existing vineyards with mixed plantations of Aleksandrouli, Mujuretuli, Tsulukidze Tetra, Saperavi, Dzvelshavi, Tsolikouri and other vine species now covers 900 hectares, with 90-100 hectares to be planted in perspective.

In case proper agro-technical and fertilization measures are undertaken the given soils are capable of producing high-quality production.

Agro-technological regulations

In order to produce the wine of appellation “Khvanchkara”, the following agro-technological regulations should be observed by considering the soil and climatic conditions.

Species of “Aleksandrouli”

Growing area: Up to 450-750 m above sea level.
Plot of planting: 2,0 x 1,5 m; 2,25 x 1,5 m
Height of stem: 60-80 cm
Form of pruning: Free and Georgian two-sided trellis.
Norm of loading per 1 m^2: 7-8 buds; 70-80 thousand buds per hectare.
Harvest: 6-6,5 tons per hectare.

Species of “Mujuretuli”

Plot of planting: 2,0 x 1,5 m; 2,25 x 1,5 m
Height of stem: 60-80 cm
Form of pruning: Free and Georgian two-sided trellis.
Norm of loading per 1 m^2: 7-8 buds; 70-80 thousand buds per hectare.
Harvest: 6,5-7 tons per hectare.

Soil cultivation
In dryland - anti-erosive measures to be undertaken on the slopes of average and great inclination: minimal and zero soil cultivation; grass-lawn system, soil mulching.

Fertilization
Application of organic-mineral fertilizers under agricultural regulations.

Phyto-sanitary regulations
Principal diseases: Mildew, powdery mildew, anthracnose.

Pests: Ticks, western grape warm, mealybug.
Pest and disease control measures: Proper contact and systematic preparations registered in Georgia.

Economic-technological characterization of the species of "Aleksandrouli" and "Mujuretuli"
"Aleksandrouli" – Georgian red vine species giving high-quality product, of an average ripening period. It is ripened at the end of September. The bunch weighs 90-100 gr.

The vine is of average growth. The harvest is 6-6,5 tons per hectare. The sugar-content of the grape reaches 260 gr/dm^3.
It is less resistant to fungous diseases. It is particularly vulnerable to powdery mildew.

"Mujuretuli" - Georgian red vine species, of later than average ripening period. It is ripened in the middle of October. The vine is of average grow, with the harvest of 6-8 tons per hectare. Average weight of the bunch is 60-90 gr. The sugar-content is 250 gr/dm^3, and the acidity is 6-7 g/dm^3. It is less resistant to fungous diseases.

"Khvanchkara" – Controlled premium-quality, red naturally semi-sweet wine of geographical appellation. It is produced with the vine species of "Aleksandrouli" and "Mujuretuli".

Wine “Khvanchkara” is characterized with dark ruby color; it has harmonious, velvet, elaborate taste with pleasant sweetness, fruit tones and species-specific aroma.

Chemical properties of the wine “Khvanchkara” should correspond to the following indicators:

Volumetric spirit-content, % - 10,5-12,0

Mass sugar concentration of no more than 30-50 gr/dm^3

Titrated acidity – 5-7 gr/dm^3

Volatile acids of no more than 1,2 gr/dm^3

Mass concentration of finished extract of no less than 20 gr/dm^3

Concentration of total mass of sulphuric acid of no more than 210 gr/dm^3

Concentration of free sulphuric acid of no more than 30 gr/dm^3

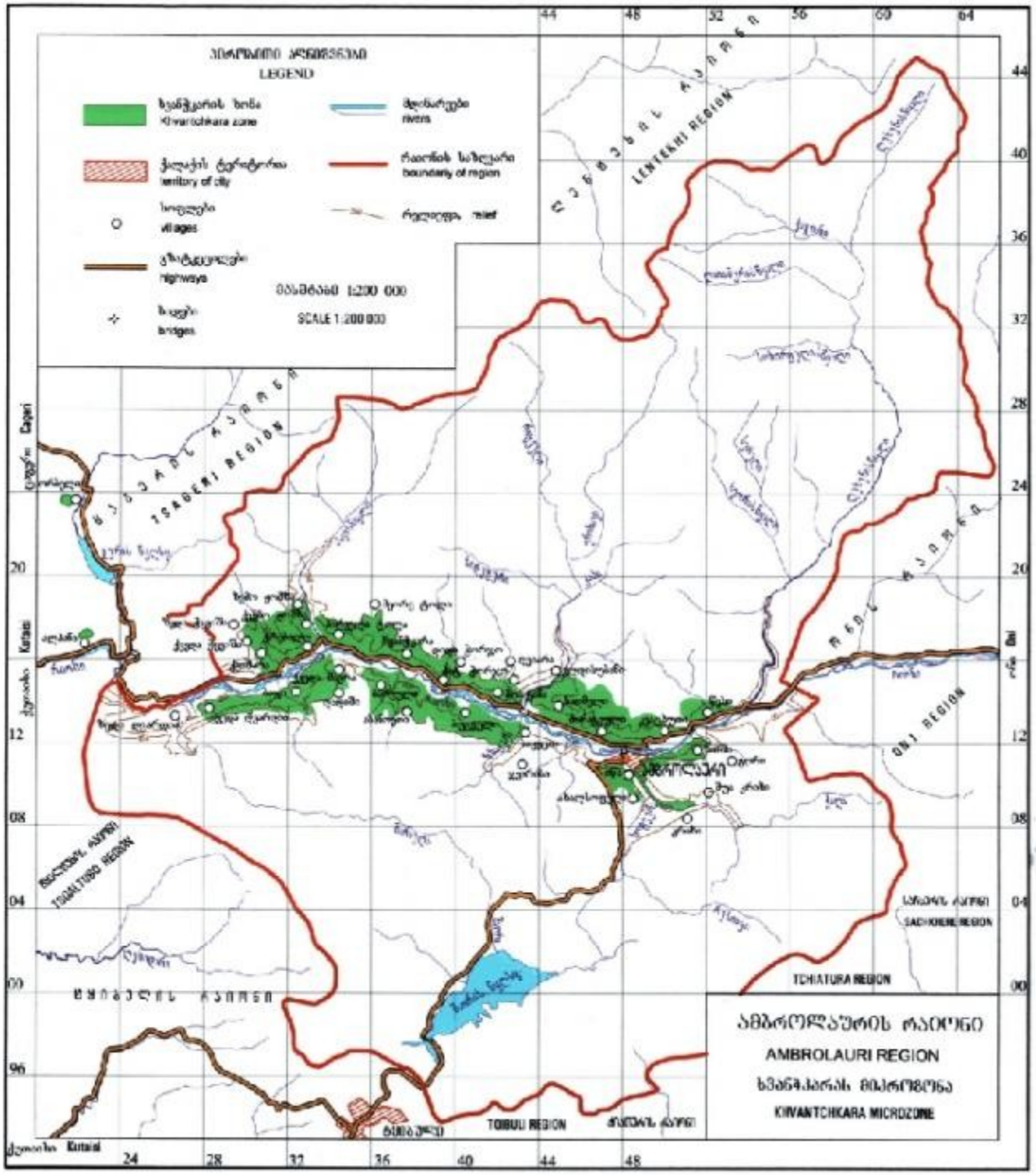
The rest norms should correspond to the legislative acts of Georgia and the EU Directive No. 1493/1999 of May 17, 1999.

Available areas for raw materials of wine “Khvanchkara”

The area for the raw material of the specific zone of wine “Khvanchkara” is approximately 903 ha, with the species of “Aleksandrouli” and “Mujuretuli” occupying 40%, or 360 ha.

The produced harvest in the micro-zone will be 2520 tons on average. In case of output of 65 decaliters of 1 ton 163,000 decaliters of bulk wine may be produced.

Special geographical location of the micro-zone of “Khvanchkara” in the pit, the microclimate developed on the slopes inclined to the river Rioni, skeletal soils rich in humic-quartz and limestone, good capability of heat absorption and cooling, originality of the species of “Aleksandrouli” and “Mujuretuli” and original technology make for peculiar properties of wine “Khvanchkara”.



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