

“TVISHI”

WINE OF APPELLATION OF ORIGIN

Production micro-zone of wine “TVISHI”

Geographical location. The specific zone of “Tvishi” is located in Lechkhumi, administrative Region of Tsageri, in the right shoreline of the river Lechkhumi, with the coordinates of northern latitude of 42°31´ and eastern longitude of 42°54´, at 435 m above sea level. The specific zone includes the extreme western foot of Racha Ridge and eastern slopes of massif. It includes the villages of Tvishi and Alpana.

Climate. The climate is damp here, with long hot summer and moderately cold winter.

The annual duration of sunshine is 1900-2000 hours, with 1400-1500 hours during the vegetation period. Average annual air temperature is 14,2°, with 22,2° in August, the hottest month of the year and +0,5° in the coldest month of January.

A stable transition of average daily air temperature above 10° takes place in the first decade of April (7.IV), and the fall below 10° takes place in the first decade of November (2.XI). Thus, the duration of the vegetation period is 209 days. The sum of active temperatures from 3700°. In such a case, this indicator is more than 3800° once in every four years.

Annual sum of atmospheric precipitations in the micro-zone is 1095 mm. The amount of precipitations falling in August almost equals to the amount of evaporated precipitations what indicates that in August of some years the vineyards need irrigation.

The annual number of days with hail during the vegetation period is 0,8 (Tsageri). May and June have most days with hail (0,3-0,3 days each). The amount of fallen precipitations is more than the amount of evaporation.

Due to the meridian direction of the Rioni Gorge, winds mainly blow along the gorge. Winds of southern-western (22%), southern (17%) and northern-eastern (12%) directions and the winds of perpendicular direction of northern (14%) and northern-eastern (12%) prevail in the zone. Average annual wind

speed is at most 1,0 m/sec. Such zones belong to the III group of weak wind activity.

Average of the annual absolute minimums of air temperature is -15° . Once in every 10 years, the minimal temperature may fall to -20° what will cause significant damage to annual vine sprouts. The absolute minimal temperature in the specific zone is -24° , but such cases are very rare.

Soils. The specific zone of the wine "Tvishi" is located in western Georgia and namely, in the hilly zone of Racha-Lechkhumi, located on the right bank of the river Rioni. In respect of relief, these places are slightly and averagely inclined slopes of various expositions with small terrace-like plains. They are mainly directed inclined south-eastwards and eastwards.

The soils are mainly represented by humic-calcareous soils with different types and varieties, which differ from one another by the thickness of profiles and humus-containing layers and texture, degree of skeletal texture and stone-forming. Dealluvial and brown soils with their varieties and types are spread on relatively small areas.

Humic-calcareous soils, which are mainly spread in the hilly zone, are characterized by great variety according to the thickness of profile, skeletal and stony texture and degree. The thickness of profile is mainly 50-80 cm, and that of humus-containing active layer is 20-40 cm. In some sections with the sharply inclined relief and with erosive processes, the soils are characterized by small thickness of profile of less than 40-50 cm, and the thickness of humus-containing layer of not more than 15-20 cm. They are mainly developed on limestone clays and talus. According to texture, these soils are mainly heavy loamy and clay soils with the content of physical clay (fraction of $<0,01$ mm) varying within the limits of 45-75%. In exceptional cases, these are loamy soils with the clay content of 35-45%.

Content of humus in these soils is little and amounts to 2,5-1,5% decreasing in the active lower layers of the soil. The content of main nutrient elements (NPK) is little. The content of hydrolysis nitrogen in these soils does not exceed 6,0 mg in 100 gr. of soil. The soils are also very poor in the content of soluble phosphorous, which is mostly represented as a trace. The content of exchange potassium is also little not exceeding 10 mg in 100 gr. of soil. Calcium carbonates are contained in little quantities amounting to 2-20%. The reaction of soil area (pH) is weak and average alkaline and pH indicator is 7,3-8,2.

A small area is represented by dealluvial soils, which are mostly spread as spots on the lower parts of slopes. These soils have relatively greater profiles

(70-100 cm) and are characterized by less content of carbonates. In some sections carbonates are fully washed-out remaining in the lower layers in insignificant quantities. According to the content of humus and main nutrient elements (NPK), these soils have low indicators, like humic-calcareous soils.

Relatively small area is represented by black soils, mostly characterized by average and small thickness of profile of 40-80 cm, and with the thickness of humus-containing active layer of 20-30 cm. According to texture, these soils are heavy loamy and clay soils with the content of physical clay of 50-70%. The content of humus in these soils is also little and constitutes 2,5-1,5% in the active layer gradually decreasing in the lower layers. The soils do not contain carbonates. The reaction of the soil area is mainly neutral and pH indicator is 6,2-7,1. The content of main nutrient elements (NPK) is also little.

Agro-technological regulations

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

Species of "Tsolikouri":

Growing area: Up to 500-800 m above sea level.

Plot of planting: 2,0 x 1,5 m; 2,5 x 1,5 m

Height of stem: 80-100 cm

Form of pruning: Free and Georgian two-sided trellis.

Norm of loading per 1 m²: 8-10 buds.

Harvest: 6-7 tons per hectare.

Soil cultivation

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 regulations.

Phyto-sanitary regulations

Principal diseases: Mildew, powdery mildew, anthracnose.

Pests: Ticks, western grape worm, mealybug.

Pest and disease control measures: Proper contact and systematic preparations registered in Georgia.

Economic-technological characterization of the species of "Tsolikouri"

"Tsolikouri" - Indigenous white vine species widely spread in western Georgia. The vine is of more than average grow and of late ripening period. It is high-yielding species. The average harvest is 6-7 tons per hectare. The average weight of its bunches is 150-160 gr. The content of sugar in the ripe grape is 200-250 gr/dm³, with 7,5-9,5 gr/dm³ of permanent acidity.

Wine "Tvishi" - Controlled premium-quality, white semi-sweet wine of geographical appellation. It is produced with the vine species of "Tsolikouri" with half stopped must.

Wine "Tvishi" is characterized from light straw to straw colour, with delicate, harmonious and elaborate taste, species-specific aroma and pleasant sweetness.

Chemical properties of the wine "Tvishi" should correspond to the following indicators:

Volumetric spirit-content, % - 10,-11,5

Mass sugar concentration of no more than 30-50 gr/dm³

Titrated acidity - 5,5-7,0 gr/dm³

Volatile acids of no more than 1,0 gr/dm³

Mass concentration of finished extract of no less than 16 gr/dm³

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

The area of the specific zone of wine "Tvishi" is approximately 15 km².

Special geographical location, the microclimate developed on the right bank of the river Rioni, soil varieties, species-specific aroma of the vine species

