

# MUKUZANI

## REGISTRATION № 2

**DATE OF REGISTRATION:** 2005 30 08

**APPELLATION OF ORIGIN:** MUKUZANI

**NAME OF GOOD FOR WHICH THE APPELLATION OF ORIGIN IS REQUIRED:** Wine

**NAME AND ADDRESS OF APPLICANT:** LEPL NATIONAL WINE AGENCY, Marshal Gelovani Ave. 6, 0159, Tbilisi, Georgia (GE)

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### 1. APPELLATION OF ORIGIN: MUKUZANI

### 2. PRODUCT DESCRIPTION

#### 2.1. PRODUCT CATEGORY

Wine "Mukuzani" red sec (dry)

#### 2.2. PRODUCT ORGANOLEPTIC CHARACTERISTICS

Wine "Mukuzani" red sec (dry) shall satisfy the following requirements:

- Color – dark garnet (dark red);
- Aroma and taste – perfect, full, extracted, velvet, harmonic, having aroma characterizing the location;
- Intensively expressed bouquet of fruit tones is developed with aging.

#### 2.3. PRODUCT PHYSICO-CHEMICAL CHARACTERISTICS

Wine "Mukuzani" red sec (dry) shall satisfy the following requirements:

- Factual volumetric spirit content – no less than 11 %;
- Total volumetric spirit content – no more than 15 %;
- Sugar content – no more than 4 g/l;
- Titrated acidity calculated on tartar acid – no less than 5 g/l;
- Volatile acidity calculated on acetic acid – no more than 1,2 g/l;
- Sulfur dioxide total mass concentration – no more than 150 mg/l; Concentration of sugar free extract mass – no less than 22 g/l.

### 3. GEOGRAPHICAL AREA AND ZONES OF PRODUCTION

Wine "Mukuzani" micro-zone is located in Inner Kakheti, on the right bank of the River Alazani.

The micro-zone Mukuzani includes Tsiv-Gombori Range slopes continuation until the River Alazani. Tsiv-Gombori Range borders it from the South-West, River Alazani – from the North-East, Akuriskhevi (Akuri Gorge) – from the North-West, and the border begins from Tananaskhevi (Tanana Gorge) mouth from the South-East, it is continued along this gorge towards the South-West until so called "Complex", then – along the way until Alazani Canall (until Kotekhi Bridge) and after the canal – until Khao Cellar. After that, the border is continued along a highway towards the North-West until Vedzirulaskhevi (Vedzirula Gorge), at first towards the West and then – the South-West direction and runs up to Gurjaani-Telavi highway. The border is continued from the highway on Javakhishvili Street until Tsiv-Gombori Range slopes, and then – until Chermiskhevi (Cherami Gorge) in the North-West direction.

The micro-zone includes the territories of following villages: Chumlaki, Akhasheni, Zegaani, Mukuzani, Velistsikhe, Vazisubani, Shashiani, Kalaura, Vachnadziani and Kakhpari.

The grapes intended for wine "Mukuzani" production shall be harvested only from the vineyards cultivated in the micro-zone Mukuzani.

Grape proceeding and winemaking takes place in the territory of the micro-zone Mukuzani, and outside, as well, but within Kakheti viticulture area.

### 4. VINE VARIETIES

Wine "Mukuzani" shall be prepared only from the grapes of Saperavi, usage of other varieties is prohibited at the winemaking.

### 5. VITICULTURE PRACTICE

- The micro-zone Mukuzani vineyards are situated on 350-700 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.

### 6. GRAPE MATURITY, VINTAGE, TRANSPORTATION

- Wine "Mukuzani" shall be produced only with ripe grapes. Sugar content shall be no less than 19%, at the vintage.
- Grapes transportation is permitted only with wood or plastic boxes, with bodyworks made of stainless steel or painted with a special dye.
- Usage of polyethylene packages and/or bags is not permitted.

## **7. VINTAGE AND WINEMAKING**

Vintage on 1 ha vineyard shall be no more than 10 tons.

Wine production shall be no more than 650 liters from 1 ton grapes.

## **8. WINEMAKING PRACTICE**

Wine "Mukuzani" is made by complete alcoholic fermentation of must.

Grapes shall be pressed and the stems – removed. The temperature for alcoholic fermentation shall not exceed 30°C. After completion of alcoholic fermentation, apple-lactic acid fermentation takes place, and at the end the sulphitation is carried out.

Wine "Mukuzani" may be aged or bottled without aging. In case of aging the process shall take place in wood barrels, within no less than 6 months.

Wine "Mukuzani" shall be represented on consumer market only packed in the bottles.

## **9. LINK BETWEEN EXCLUSIVE QUALITY, CHARACTERISTICS AND/OR REPUTATION**

### **WITH GEOGRAPHICAL AREA**

### **9.1. NATURAL FACTORS**

#### **Climate**

Climate formation in the micro-zone Mukuzani is defined by atmospheric processes developed in subtropical and moderate latitudes and moved from the East to the West. No less importance have the processes caused by local relief conditions, in particular, cold air masses flowing down from Caucasus high top glaciers. The climate is moderately humid, with hot summer and mild winter. In the slopes intended for vineyards the horizon is essentially extensible from the East to the West that creates effective radiation regime for vine cultivated on the slopes inclined towards the North-East. Annual duration of sunlight varies within 2150-2200 hours, and during the vegetation period the sunshine continues 1600 hours. Sum of annual radiation is no more than 130 kcal/cm<sup>2</sup>, and 95-100 kcal/cm<sup>2</sup> – in the vegetation period. Sum of direct annual radiation is 75 kcal/cm<sup>2</sup>, and scattered – 54 kcal/cm<sup>2</sup>.

The average annual air temperature is +12,5°C, +23,6°C – of the warmest months (July and August) and +1,1°C – of the coldest month (January).

Sum of active temperatures in the micro-zone is 4120-3440°C.

The annual sum of atmospheric precipitations in specific zone, during the vegetation period, is 645 mm, and annual – 870 mm. The precipitations are less at fruit formation period (June, July, August), and vineyards need to be additionally irrigated. The soil is moderately humid and does not need irrigation at the times of grape maturity.

Relative air humidity is 71%. Less humidity is in July (63%) and August (60%), relatively more – in the end of autumn (78%) and winter (76-75%).

Snow cover is created in the last decade of December (25.XII), and melting takes place in mid-March. Snowy days amount is 26. Last frosts are finished in 24 March, and once in 10 years can be continued to mid-April. Period without frosts is continued more than 230 days. Air temperature average annual absolute minimum is -9-11°C, and can fall to -15°C once in 10 years.

Annual average value of hailing days is 2.1. May and June are the most hailing months (0,7-0,5).

There are prevailing mostly the Western – (32%) and South-Western (23%) Rumb winds. Days without winds are 21%, averagely. At the night until sunrise the cold air masses flowing down from Caucasus high top glaciers strengthen frosts of winter and spring.

The micro-zone Mukuzani belongs to wind impact III group regions. Average wind speed is 1.4 m/s. In the purpose to protect the area the double-row windshield strips cultivation is recommended.

## **Soil**

In accordance of existed data analyses, there are distinguished brown, alluvial and deluvial varieties of soils with their sub-varieties:

- 1) Dark brown, very thick, slightly leptosol, loamy and clay;
- 2) Dark brown, (old alluvial), very thick, loamy;
- 3) Dark brown, moderately thick, slightly leptosol, moderately and slightly clay.
- 4) Rendzino-brown, moderately thick, slightly leptosol, slightly clay and heavy clay;
- 5) Rendzino-brown, moderately thick, slightly leptosol, loamy and clay;
- 6) Forest brown, very thick, slightly leptosol, stony and heavy clay;
- 7) Deluvial-carbonated, very thick, clay;
- 8) Alluvial-carbonated, very thick clay;

9) Alluvial-carbonated, very thick leptosol clay.

Very and moderately thick brown varieties of soils are presented in the main part of territory;

Deluvial carbonated – on the center, creating slightly inclined trails on the North-Eastern foothills of Tsiv-Gombori Range.

Thick profile soils depth varies from 80-100 cm to 110-130 cm, in average thickness soils the depth varies from 60-70 cm to 70-80 cm. Active humus layer in thick soil varies from 50-60 cm to 75-85 cm, and from 3-40 cm to 40-50 cm – in the average soils.

Soil mechanical content is moderately, very or slightly loamy, and in some places is moderately loamy. The structure is changed from grainy-solid (in the upper layers) to solid-pea-like from the topsoil towards the bottom. Soil includes the roots, organic waste, lime dots and pebbles. Calcium carbonates content increases downwards; it is 24% in low layers, but more in rendzino-brown soils low layers.

Humus content is very low everywhere. Hydrolyzed nitrogen, soluble phosphorus and exchange potassium contents are very low. Soil area reaction (pH) is moderately alkaline.

Soil cover represented on inclined trails and developed on the rocks has high content of carbonates. Everything together with exposition, sunlight and climatic conditions give opportunity to produce high quality wine "Mukuzani".

### **Human Factor**

Viticulture and winemaking exist in Mukuzani micro-zone from ancient times. At the beginning of the 19<sup>th</sup> century, the estate of Aleksandre Chavchavadze became prominent here, being notable for significant capital investments and advanced technologies.

In the second half of the 19<sup>th</sup> century, the abolition of serfdom gave a powerful impetus to the development of this field and economy, in general. Unpaid laborers were replaced with hired workers, the backward and undeveloped area was quickly engaged in the common capitalist relationship, and the process of creation of capitalist-farming households began.

These processes became more tangible for viticulture and winemaking from the 1880s, when the Princes Estates Department massively purchased Kakhetian nobles' estates, including in Mukuzani and Zegaani, and rapidly began to modernize vineyards and cellars.

Said processes were further strengthened from the 1920s, when Georgian scientific centers started functioning in Tbilisi and Telavi. New vineyards were cultivated with grafted saplings, wineries equipped with modern technics were built in Mukuzani and Zegaani, and new technologies were introduced.

Wine "Mukuzani" is produced since 1888 and is considered to be a flagship of Georgian red dry wines. 13 medals, including 8 gold, 4 silver and 1 bronze medals, were awarded to wine "Mukuzani" at various international

competitions and exhibitions, until 1990.

Geographical location of micro-zone Mukuzani, characteristic regional climate: mild winter and hot summer, moderate amount of precipitations, diversity of soils, special features of harvested Saperavi grape variety, characteristic of this zone and local, centuries-old tradition of viticulture and winemaking provide unique organoleptic features of wine "Mukuzani", characterizing only of this wine.

## 10. SPECIAL LABELING RULES

## 11. TRANSITIONAL PROVISIONS

## 12. ACCOUNTING AND NOTIFICATION

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

## 13. MAIN CONTROLLABLE POINTS

During control of the Protected Appellation of Origin wine "Mukuzani" production process the producer shall satisfy the requirements established by LEPL National Wine Agency, and shall comply with the 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 harvest per ha	Vintage journal
Grape harvest in total	Vintage journal
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 Protected Appellation of Origin shall be carried out by LEPL National Wine Agency, according to the rules established by the legislation of Georgia.

## **15. MAP OF THE MICRO-ZONE**





