

## STUDY ON THE EVOLUTION OF THE HOP MARKET IN ROMANIA DURING THE PERIOD 2007-2014

Irina-Adriana CHIURCIU

University of Agricultural Sciences and Veterinary Medicine Bucharest, 59 Marasti, District 1, 011464, Bucharest, Romania, Phone: +4021 3182564, Fax: +4021 3182567, Mobile: +40723 548814, Email: irina.chiurciu@yahoo.ro

*Corresponding author:* irina.chiurciu@yahoo.ro

### Abstract

*The aim of this article is to present the evolution of hop market during the period 2007-2014 in Romania. It is based on the statistical data provided by the National Institute of Statistics and by the Ministry of Agriculture and Rural Development. The indicators used for processing the data are the following: the total production, the cultivated areas of hop and the quantity of hop imported and exported. From the analysis of the results obtained we can observe a decrease of 69.51% in 2012 from the total production in comparison with 2007. In the last years of the period in study, from 2012 to 2014, it increased by 104.4%. However the inland production is insufficient for the local beer industry. Romania has to import vast amounts of hops to ensure the brewers requirements across the country.*

*Key words:* evolution, hop, production, Romania, surface

### INTRODUCTION

Although it is cultivated on small areas in our country due to climatic requirements and high production costs, the hop is an important technique plant because it represents the raw material for the beer production [2]. Hop culture technology requires special conditions of temperature and humidity; it also needs 10 to 12 irrigations per year, while the first harvest is obtained 3 years after the plantation.

The favorable areas for the hop culture are situated in the heart of Transylvania, in Alba, Cluj, Brasov, Mures, Hunedoara and Sibiu. In 2014, in Romania the hop was cultivated on 245 hectares resulting a production of 233 tons.

The varieties of beer hop grown in Romania are: Brewers Gold, Magnum and Taurus.

Worldwide, the trend is represented by the reduction of the hop cultivated surfaces even though the beer production is growing, especially the aromatic one in detriment of the bitter one [1].

The decrease of hop surfaces is related to the demand for less bitter beers, which requires a low content of alpha acid, the bitter component of the hop who gives beer its taste. EU is the major exporter of hop on the world

market and has 60% of the cultivated area. The main producing Member States are Germany (60% of EU land and around 1/3 worldwide), the Czech Republic, Poland, Slovenia, UK, Spain, France [1].

The main importer is Russia, followed by the United States and Japan.

### MATERIALS AND METHODS

In order to characterize the evolution of hop production, the following indicators were used: the area cultivated with hop in our country between the years 2007-2014, the total production of hop for the same period, the repartition of surfaces cultivated by counties in 2013 in comparison with 2007, the repartition of hop production in 2013 in comparison with 2007, the quantity of hop imported and exported between the years 2007-2014, as well as the price.

The data, collected from Ministry of Agriculture and Rural Development and the National Institute of Statistics have been statistically processed and interpreted.

### RESULTS AND DISCUSSIONS

Market organization covers both hops and hop products from the following: cones, hop

powder, hop powder with higher lupulin content, extract of hops, mixed hop products used in brewing. Hop market in the European Union is subjected to the following regulations: Regulation (EC) no. 1307/2013 of the European Parliament and of the Council; Regulation (EC) no. 1308/2013 of the European Parliament and of the Council; Regulation (EC) no. 792/2009 of the Council which establishes the rules [3].

Worldwide there is an international association of hop, IHGC- International Hop Growers' Convention, which consists of 32 members (countries, organizations or associations of growers), including Romania [4]. Because there is a stock, the price is formed on the basis of supply and demand, following annual assessments of IHGC, the main producers, Germany and the US, having a word in the establishment of the price.

In Romania, the leadership and the management of market are controlled by M.A.R.D. through the Technical Inspection Bureau of hop and hop products (established by Law no.627/2002); Hop Advisory Council and Hop Producers Association of Romania (made up of five producers). The national legislation includes the Law no. 627/2002; Order no. 172/2003; Order no.623/2002; Order no.74/2004.

The hop surface in Romania has increased until 1990 when it reached 2350 ha, with average yields of 11, 2 q/ha. Unfortunately, after 1990 the surfaces and the hop production decreased significantly (in 1995- 1,727 ha, in 2000- below 500 ha, in 2014 - 245 ha), one of the causes is infrastructure's degradation of the metallic systems for supporting hops.

Forms of support: support schemes financed from the Community budget (payment per area); support schemes financed from the national budget (national aid); State aid schemes (fuel). For 2014 MARD established a quantum of transitional national aid in the vegetal sector of 19.81 euro/ha. For the increase of surfaces cultivated with hop, this aid is supplemented with payments which represent specific transitional national aid, decoupled from production of 335.00 euro/ha [5].

If in 2007 in Romania were cultivated 440 ha

of hop, in 2014 the cultivated area reached 245 ha. For the analyzed period (2007-2014) the maximum is 501 ha in 2008, and the minimum is 215 ha in 2010 [5]. Starting with the year 2010 there is a slight increase of the areas cultivated with hop from 215 ha to 245 ha meaning that it increased by 12.24% (Fig. 1).

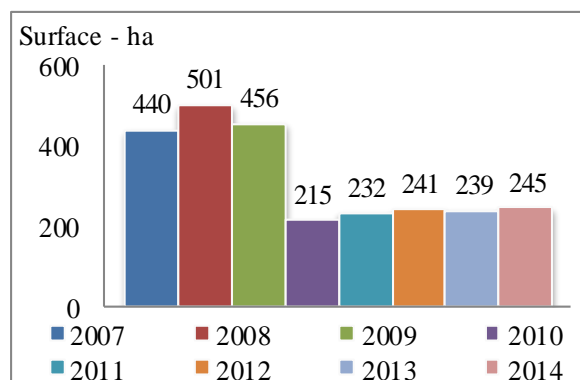


Fig. 1. The evolution of the surfaces cultivated with hop during 2007-2014 in Romania

Source: Site of MARD, Site of National Institute of Statistics

The total production of hop has recorded a decrease starting with 2007 from 374 tons to 114 tons in 2012. Starting with 2013 the total production increases from 172 to 233 tons [5]. This is due to the increase of the cultivated areas (Fig. 2).



Fig. 2. The evolution of the total production of hop in Romania for the analyzed period

Source: Site of MARD, Site of National Institute of Statistics

In 2007 the situation of the cultivated areas was the following: in Mures County- 420 ha meaning 95% of the total of 440 ha, the rest of 20 ha in Sibiu County. In 2007 there were no hop plantations in Alba County. By comparison, in Mures County the cultivated

areas have decreased by 56.90% from 2007 to 2013, in Sibiu County the rest of the surface remained constant - 20 ha, and in Alba County new plantations were founded on 38 ha [6].

In 2013 a surface of 239 ha was planted with hop of which 181 ha in Mures County, 20 ha in Sibiu County and 38 ha in Alba County, meaning Mures County - 76%, Alba County - 16% and Sibiu County - 8% (Fig. 3).

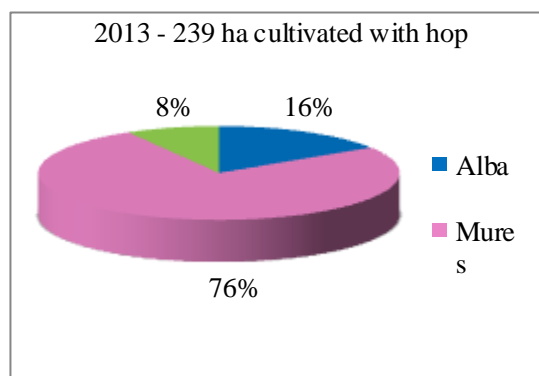
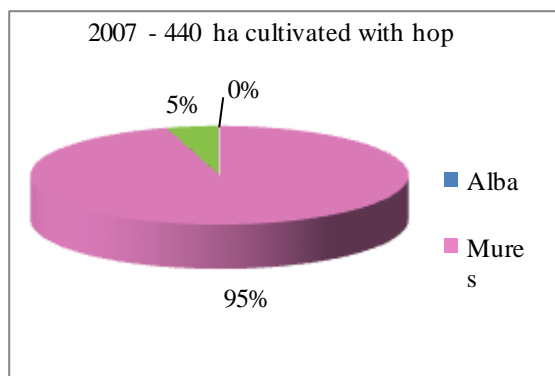


Fig. 3. The distribution of the hop cultivated surfaces in 2007 in comparison with 2013

Source: Own calculation.

In 2007 the production of 374 tons was assigned as the following: 89% in Mures County - 334 tons and 11% in Sibiu County - 40 tons. In comparison with the production from 2013, we see that in Mures County it decreased by 60.48% and in Sibiu County by 25%.

From the total of 172 tons produced in 2013, 10 tons were harvested from the plantations established in Alba County, 132 tons in Mures County and 30 tons in Sibiu County [6]. This means 17% - Sibiu County, 6% - Alba County and Mures County - 77% (Fig.4).

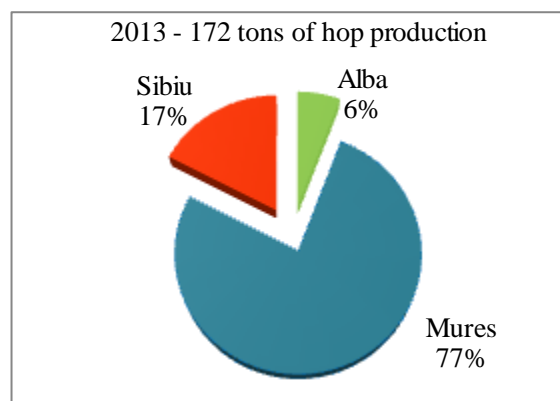
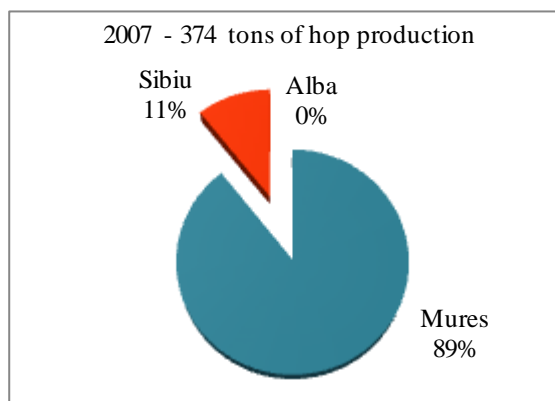


Fig. 4. The distribution of the hop production in 2007 in comparison with 2013

Source: Own calculation.

Analyzing the intra and extra trades (Table 1) shows that in 2013 the amount of imported hops decreased by 34.32% in comparison with 2011, summing 3,066.49 thousand euros. This decrease is due to the increase of hop surfaces from 231 ha to 239 ha. The largest amount imported was recorded in 2008 - 1,257.28 tons. Regarding exports, Romania is not a competition for

the exporters, with exports up to 21.65 tons in 2008, 0.29 tons in 2012 and 0.00 in 2013. In figure 5 is represented the price evolution for the imported hop so it can be concluded that the price per ton of hop registers an increase by 30.03% between the years 2007-2010, and after that an increase by 29.28% between 2011-2013.

Table 1. The situation on the hop imports and exports from 2007- 2013 in Romania

Year	Import Amount (tons)	Import Value (thousand euro)	Export Amount (tons)	Export Value (thousand euro)
2007	629.19	5,724.37	17.97	137.07
2008	1,257.28	12,261.71	21.65	142.27
2009	357.84	4,627.50	0.02	0.14
2010	280.32	3,644.83	25.42	41.71
2011	328.57	3,301.99	0.80	2.97
2012	233.47	2,707.12	0.29	5.77
2013	215.79	3,066.49	0.00	0.00

Source: Customs National Authority and the N.I.S.

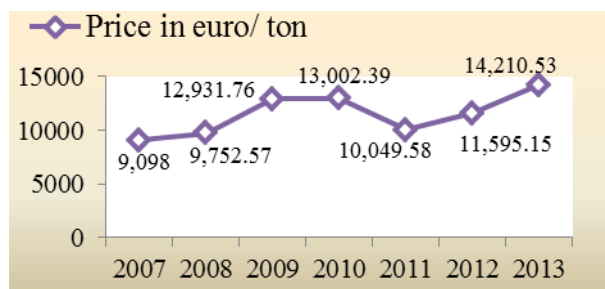


Fig. 5. The price evolution for the imported hop during 2007-2013 in Romania

Source: Own calculation.

## CONCLUSIONS

The analysis of the hop market in Romania in the period 2007-2014 showed the following:

- The surface cultivated with hop has decreased during 2008-2009, with a negative impact on the production. Starting with 2010 there is a slight increase of the cultivated area from 215 ha to 245 ha in 2014;
- Total production of hop decreased by 69.51% in 2012 compared to 2007. In 2014 stands a doubling of the total production in comparison to 2012 due to the climate conditions and to the young plantation having the first harvest;
- In 2007 the surface of hop from Mures County represented 95% of the total surface, and in 2013 it dropped to 76%. While in Sibiu County the surface remained constant, in Alba 38 ha of the young plantations were having the first harvest in 2013;
- Compared to 2007, in 2013 the contribution to the total production of hop from Sibiu County increased from 11% to 17%, while for Mures it decreased from 89% to 77%;
- The inland production of hop covers only 15% of the local beer industry so Romania needs to import hop. In terms of imports it

can be noticed a decrease in 2013 compared to 2007 from 629.19 tons to 215.79 tons;

- Since 2011 the price of imported hop increased from 10,049.58 euro/ton to 14,210.53 euro/ton in 2013;
- In terms of exports, the quantities are insignificant. In 2013 Romania hasn't exported hop.

In conclusion, the hop is an important culture for both the brewing industry and the zootechnics, as well as for the pharmaceutical industry.

It is necessary that EU continues providing the income supports through decoupled payments as the bounties are more effective in hop sector.

Romania has to extend the hop cultivated surfaces by applying appropriate agricultural policies and to support the young plantations till the first harvest.

## REFERENCES

- [1] Cernea S., 2013. Situation of hop culture and beer production in the world. Hop and medicinal plants, Year XXI, No. 1-2 (41-42), 16-21
- [2] Duda M.M., Rusu T., Vârban D.I., Muntean L., Muntean S., Moldovan C., B Duda B.M., 2013. Climate monitoring of hops in Seleuş, Sighişoara area, Romania. Hop and medicinal plants, Year XXI, No. 1-2 (41-42), 26-30
- [3] Site of the European Union - [www.europa.eu](http://www.europa.eu)
- [4] Site of IHGC - [www.hmelj-giz.si/ihgc/obj.htm](http://www.hmelj-giz.si/ihgc/obj.htm)
- [5] Site of M.A.R.D. - [www.madr.ro/culturi-de-camp/plante-tehnice/tutun-si-hamei.html](http://www.madr.ro/culturi-de-camp/plante-tehnice/tutun-si-hamei.html); date operative 2007-2014, AGR 2B
- [6] Site of National Institute of Statistics - [www.insse.ro](http://www.insse.ro) AGR 108 A, AGR 109 A