

## INTRODUCTION

The Region of Murcia is one of the most important regions in stone fruit production in Spain. Productions of peach, plum and apricot are important but the sweet cherry production in 2009 only represented the 1% of the Spanish production.

The development of this crop can offer a suitable alternative to others stone fruits. For that, in 2007 was established in Jumilla an experimental orchard with commercial varieties from different countries, to study their behaviour in our conditions. The experimental station is located in a representative area of stone fruit production of the Region, characterized by soft winter temperatures and hot summers with maximum temperatures around 40°C.

## OBJECTIVE

The aim of this work is to identify varieties with good fruit quality and productivity, that growers can use to develop this crop in Murcia.

## MATERIALS AND METHODS

The studies were carried out during 2009-2014 on 69 varieties with a total of 3 trees/variety. The varieties were grafted on 'Mariana 2624' (*Prunus cerasifera* x *Prunus munsoniana*) rootstock with an interstock of 'Adara' (*Prunus cerasifera*), in order to avoid the incompatibility between rootstock and sweet cherry varieties. Trees were conducted in Spanish Bush in a planting distance of 4.5 x 2 m and provided with a drip irrigation system. Climatic data were provided by the 'Servicio de Información Agrometeorológica', (SIAM).

In each tree were measured trunk section area and total production. In each variety were recorded flowering and ripening period (Baggiolini, 1952), grow habits, flower density and occurrence of double fruits. Also, the fruit size, fruit weight, fruit firmness, colour, acidity and °Brix was measured in 10 fruits/variety.

## RESULTS

The flowering period of all the cultivars studied occurs between the last week of February, with the very early Spanish variety 'Cristobalina', and the second week of April with the cultivar 'Hudson' (Graph. 1). Average duration of the flowering period was 12 days. Harvest season was extended during the beginning of May and finished the second week of June, with the same two cultivars 'Cristobalina' and 'Hudson' respectively. The minimum period, from full blooming to ripening, was for 'Primulat' with 27 days, and the maximum was for 'Summer charm' with 69 days.

In 2012 the production was no harvested because it was very low. The most productive cultivar was 'Lapins' that produced more than 20 Kg/tree a year, and with a maximum production of 46,6 Kg/tree in 2014. Others nineteen cultivars, also presented goods productions up to 10 kg/tree a year. Cumulative production, of 2010, 2011, 2013 and 2014, for the most productive cultivars are shown in graphic 2.

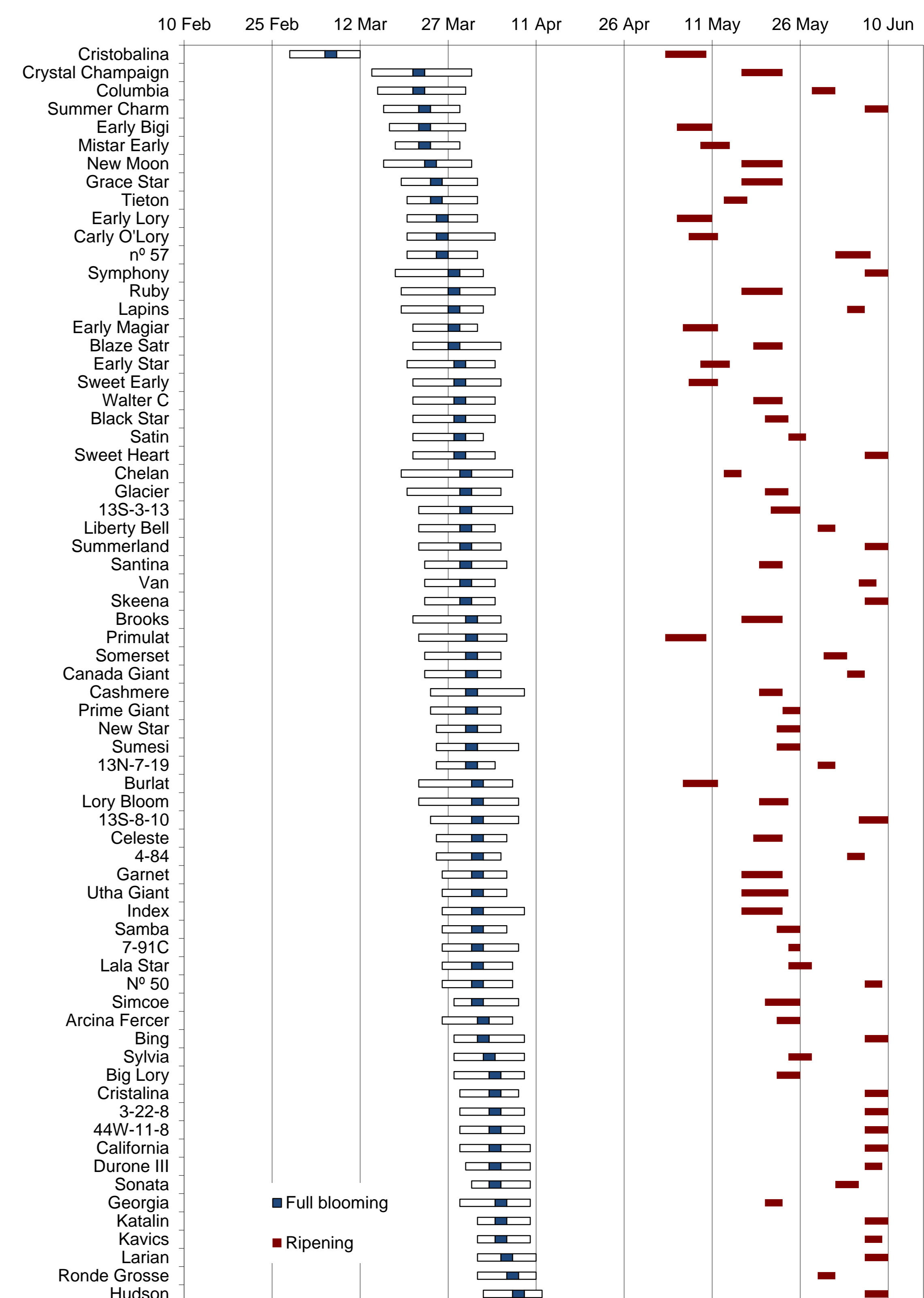
Fruit weight, sugar content and firmness, for the top twenty cultivars, are shown in graphics 3, 4 and 5.

'Sanson' (S 57), presented the biggest fruit weight with 14.5 g, but the productivity was very low. Other fifteen cultivars presented an average of weight up to 9 grams (Graph. 3).

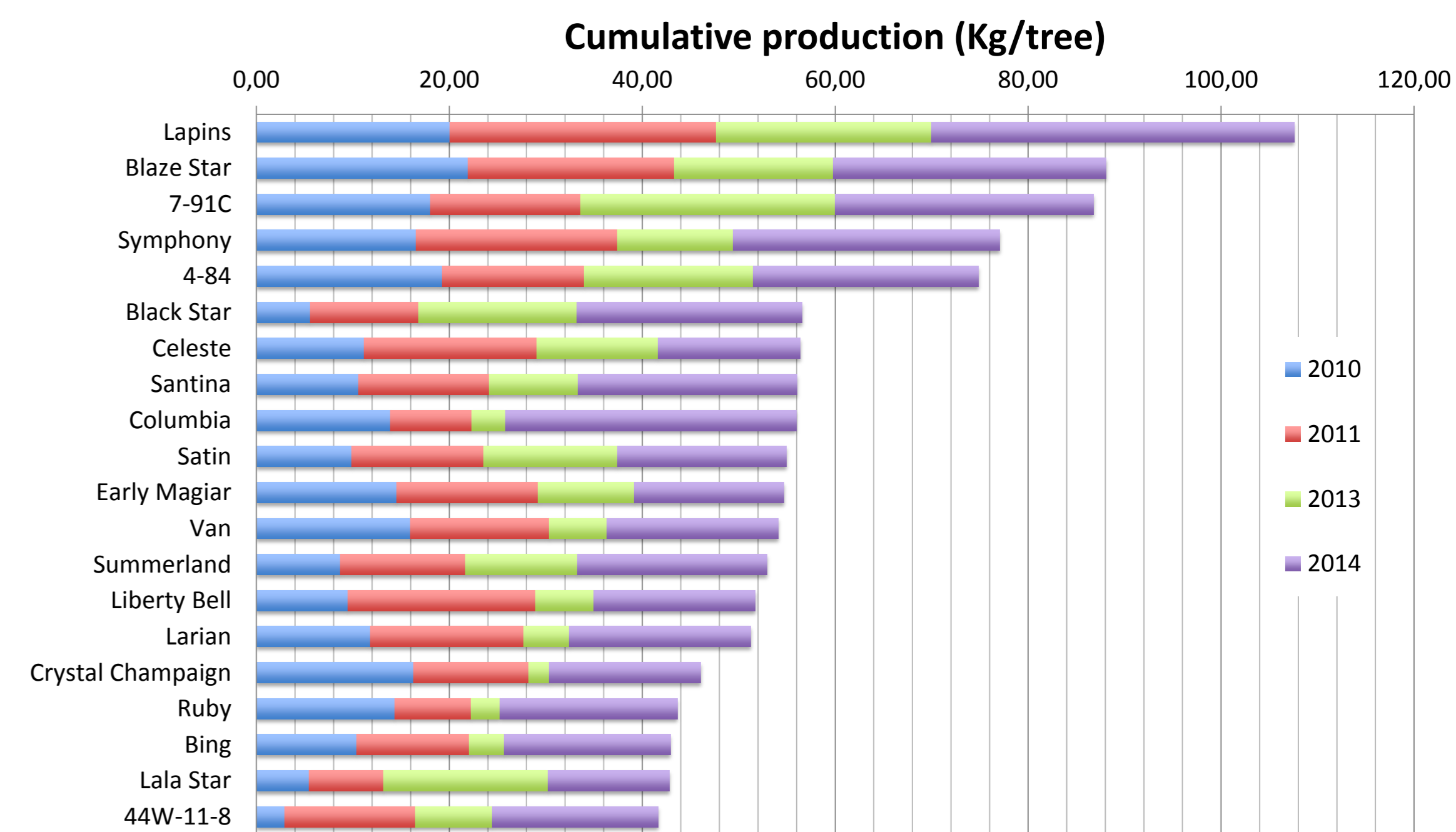
'Cristobalina' showed the highest value, 24.3 °Brix, in sugar content (Graph. 4), and other 33 cultivars also obtained good values, up to 18 °Brix.

'44w-11-8' with 30.6 N, presented the highest value of firmness (Graph. 5). Also we founded, more than 40 varieties with values of firmness bigger than 15 N.

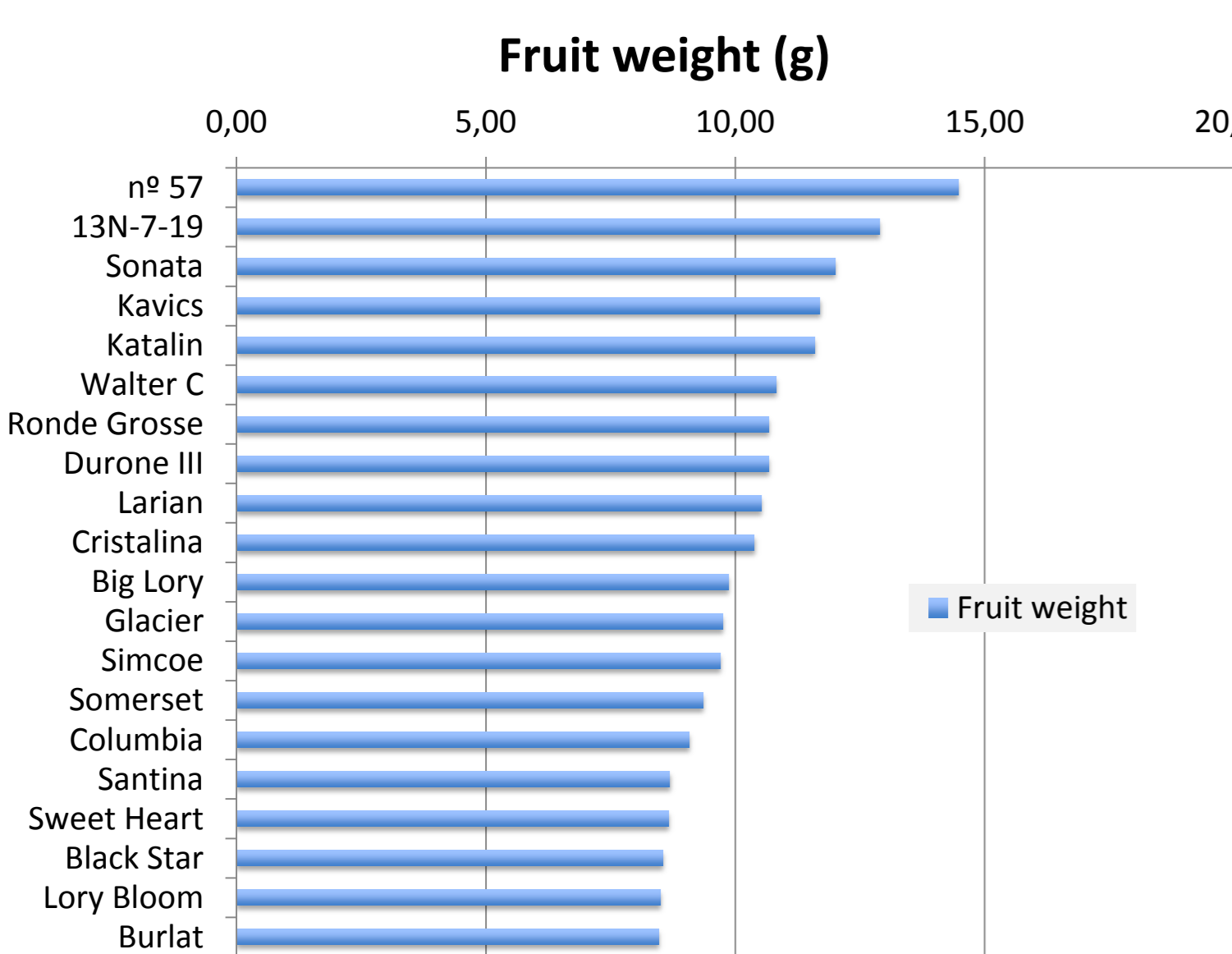
'Ruby' showed the highest value for double fruits with a total of 31.8%. Also this phenomenon was important in twelve varieties more, that presented values up to 10% of double fruits respect of their total production (Graph. 6). However, other twelve varieties not present this abnormality in the studied period.



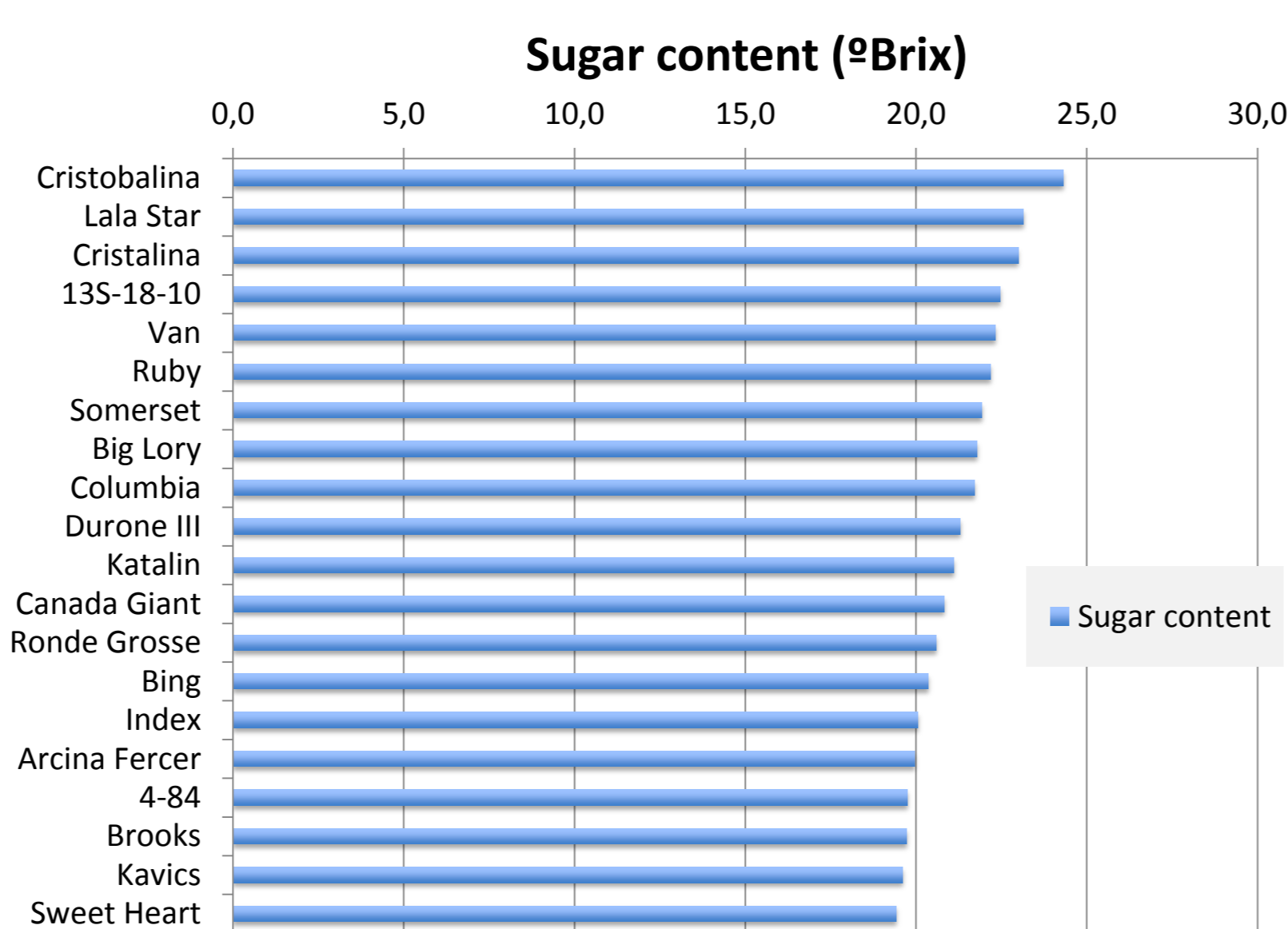
Graphic 1. Flowering, full blooming and ripening period in studied sweet cherry cultivars (2014)



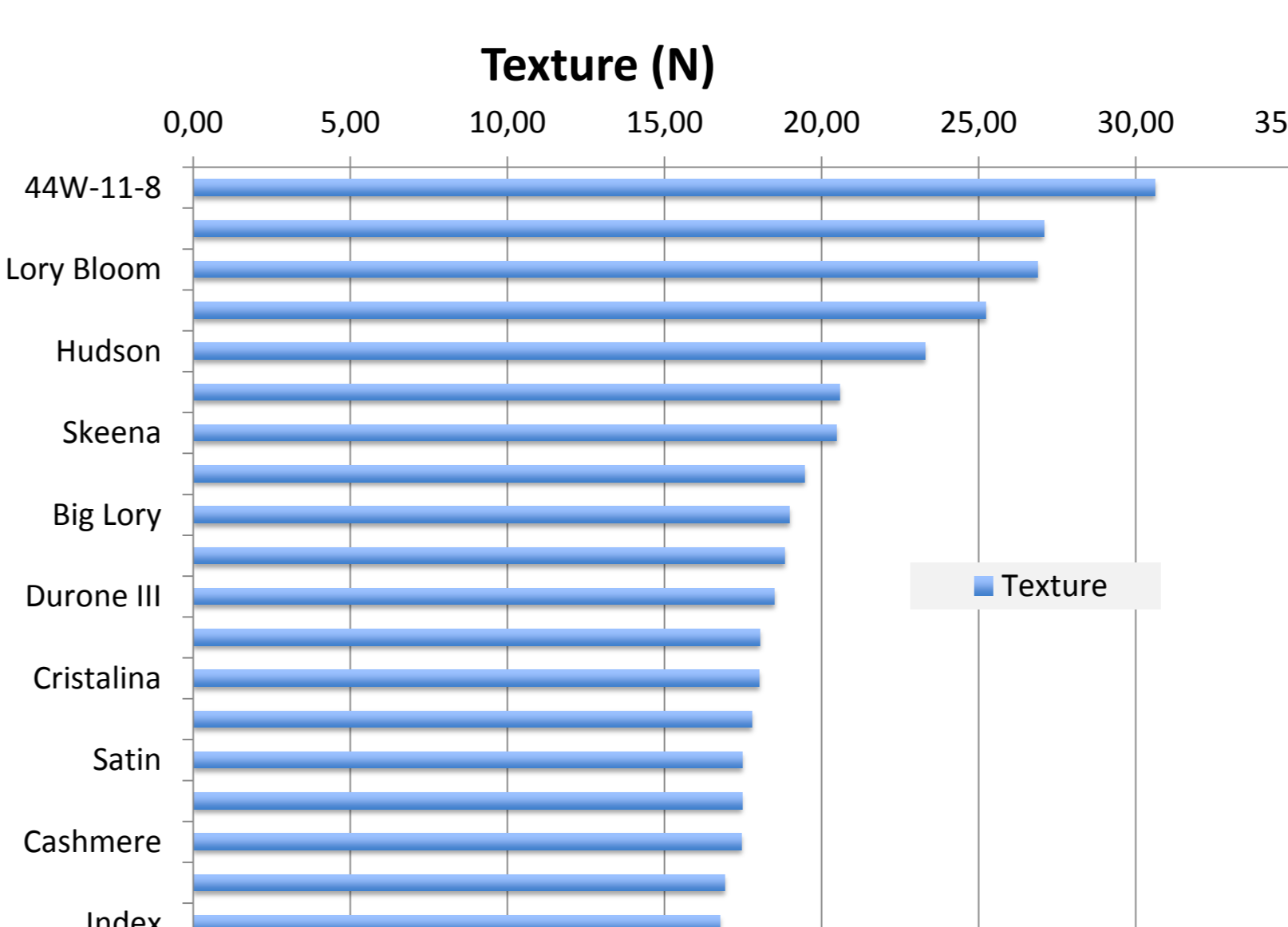
Graphic 2. Cumulative production (2010, 2011, 2013 and 2014)



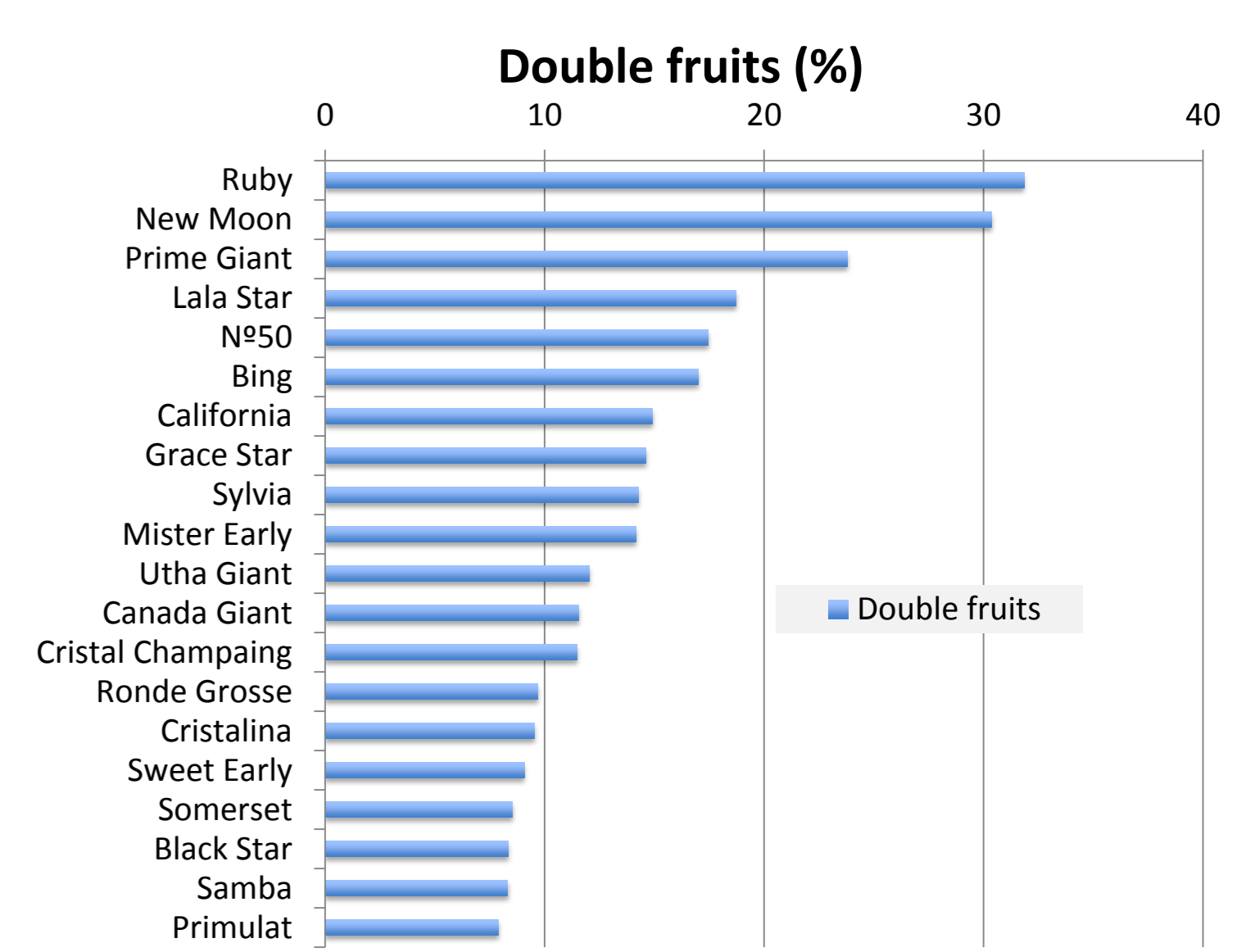
Graphic 3. Average fruit weight (g) of the top 20 cultivars.



Graphic 4. Average sugar content (°Brix) of the top 20 cultivars.



Graphic 5. Average Firmness (N) of the 20 top cultivars.



Graphic 6. Top 20 varieties on the occurrence of double fruits (%).

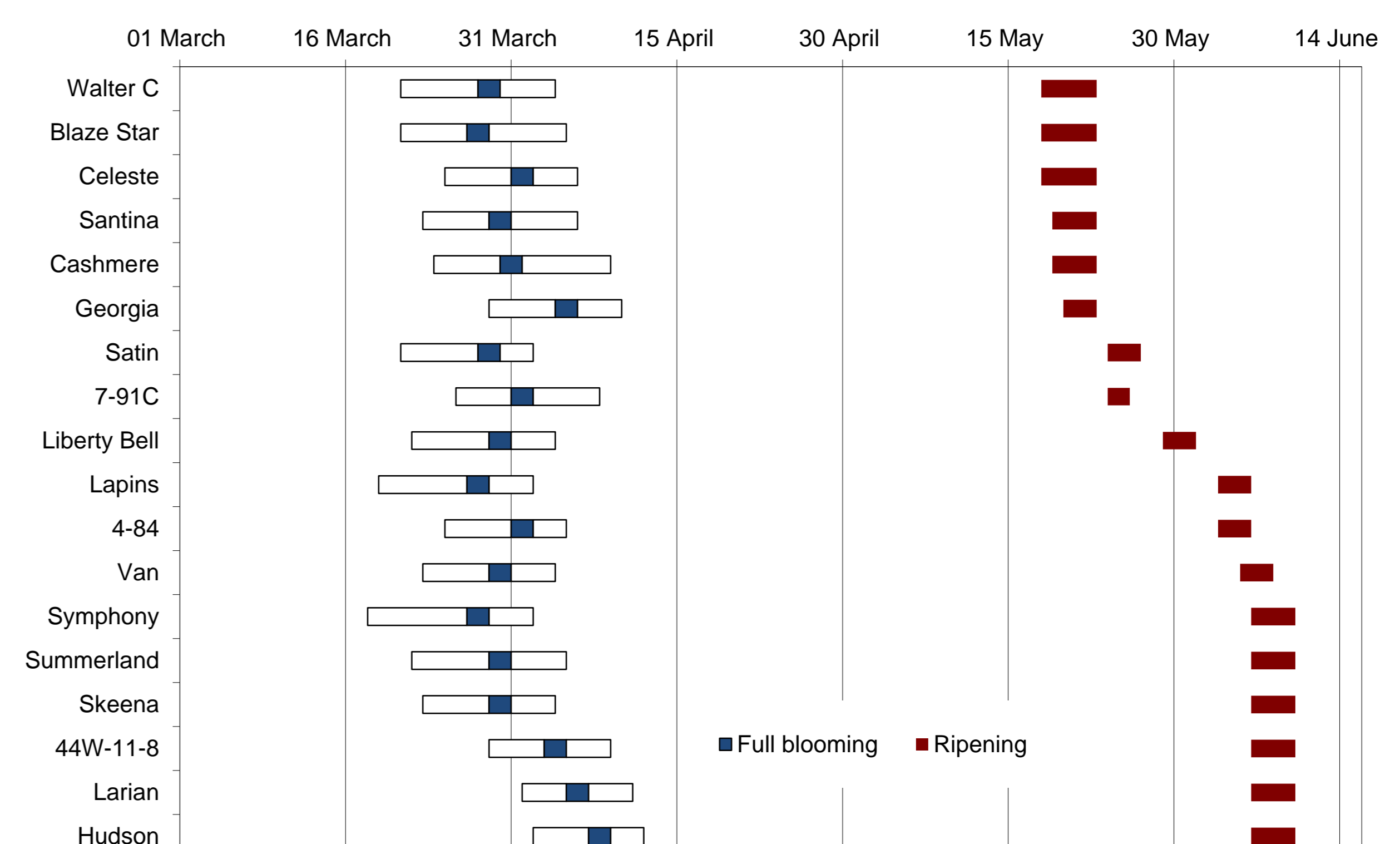
## CONCLUSIONS

The production of sweet cherries in our warm conditions is possible, despite of the occurrence of double fruits. The recommend cultivars are shown in graphic 7, because they have good productions and fruit quality. However, not early-ripening cultivars were found in the varieties studied with enough quality and productivity for recommend it.

## REFERENCES

BAGGIOLINI M. (1952). Stade repères du pécher. Revue Romande d'Agriculture, Viticulture et Arboriculture, 4: 29

SIAM. <http://siam.imida.es/apex/f?p=101:1:576149443011197>



Graphic 7. Flowering, full blooming and ripening period in the recommended sweet cherry cultivars.