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I. RESURSE GENETICE, AMELIORAREA SPECIILOR POMICOLE
GENETIC RESOURCES, BREEDING OF DECIDUOUS FRUIT TREES SPECIES

EVALUAREA CALITĂȚII FRUCTELOR LA SELECȚIILE VALOROASE DE LONICERA FRUCTIFERĂ (*LONICERA CAERULEA VAR. KAMTSCHATICA*)
EVALUATION OF FRUIT QUALITY AT FRUIT SELECTIONS VALUABLE OF BLUE HONEYSUCKLE (*LONICERA CAERULEA* VAR. *KAMTSCHATICA*)

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Abstract

After 17 years of breeding and selection, in the year 2004 it was obtained the Loni variety. Further breeding and selection had resulted in obtaining 73 hybrids. The fruits of this species are less known in Romania, to the great mass of consumers, and most fruits are used in to the drugs make based on natural extracts. The last three years at RIFG Pitesti-Maracineni we conducted a study on a number of 11 elites, in order to identify the most valuable elites with the better quality of fruit to promote at the consumers menu. After three years of study on the fruit quality at 11 elites, we recommended the SL 57 for fresh fruit consumer.

Key words: *Lonicera caerulea*, berry fruit firmness, soluble solids, quality fruit
Cuvinte cheie: *Lonicera caerulea*, fermitatea fructelor, substanță uscată, calitatea fructelor

1. Introduction

The international interest for the fruits of this species began to increase due to increased content of sugars, acids, macro and micronutrients especially in anthocyanins (Malodobry, 2010). Also, the recent researches to animals have shown scientifically that regular consumption of fresh fruits of blue honeysuckle resulted in a decrease in tumour diameter (Gruia, 2008). In Romania blue honeysuckle was introduced in 1985 by Mladin George from Northern Russia (Mladin, 1997), following an expedition to collect seeds from wild genotypes. After breeding and selection work in the year 2004 he obtained the Loni cv. Further breeding and selection work had resulted in obtaining of 73 elites. Since the fruits of this species in Romania are less known to the great mass of consumers, and most fruits are used in to the drugs make based on natural extracts, the last three years at RIFG Pitesti-Maracineni we conducted a study on a number of 11 elites, in order to identify the most valuable elites with the better quality of fruit to promote the fruit of this species at the consumers menu.

2. Material and methods

The study regarding the quality of blue honeysuckle fruit elites was performed in the experimental fields of the Small Berry Department of the Research Institute for Fruit Growing Pitesti, during 2009 – 2011. From a lot of 73 hybrids we have chosen 11 with the best fruit taste. On these elites were made the following determinations from an easting with 50 fruits in three repetitions. The study regarding the quality of blue honeysuckle fruit elites was performed in the experimental fields of the Small Berry Department of the Research Institute for Fruit Growing Pitesti, between 2009 and 2011. From a lot of 73 hybrids we have chosen 11 with the best fruit taste. On these elites were made samples of 50 fruits / bush in three repetitions the following determinations: average weight of fruit was determined by gravimetric method, height and diameter of fruit were determined by measuring with the caliper. The index size was calculated by formula: (height +large diameter +small diameter)/3, and shape index by the formula: (larger diameter + smaller diameter)/ 2 height (after Botu and Botu, 1997) the fruit firmness was determined with a SHIMPO DFS apparatus on 25 randomly selected berries from each replication. Soluble solids content was determined in berry juice obtained from 10 fruits from every replication, by means of digital refractometer (PR Series). The results were statistically calculated by Duncan´s Test at a significance level=0.05.

3. Results and discussions

On average of the three experimental years the fruit average weight to the blue honeysuckle, showed that the elites SL65, SL63, SL 5, SL44, SL64 and SL57 recorded the biggest fruit, over 1 g / fruit, these elites are significantly by 18% greater than Loni and SL2 who had average weight of fruit 0.56 g/fruit, respectively 0.59 g / fruit (fig.1). The edited with the highest average weight per fruit was SL65 (1.44 g / fruit) that is significantly higher by 25.7% versus the average fruit weight recorded to Loni variety (Fig. 1).

On averaged over three years of study the SL 57 has recorded the best value of the fruits height, this was significantly by 16.8% versus Loni cv. In exchange, no significant differences have recorded the SL57 versus the SL63 and SL5. The SL 57 versus SL 44, SL64 and SL65 were significant different by 12.6% higher (Fig. 2).

The evaluation on the fruits diameter showed that the Loni cv. has recorded the lowest fruit diameter (7.9 mm); this was significantly lower versus the selections SL5, SL63, SL15, SL65, SL 6 where diameter of the fruit was about 1 cm (Fig. 3).

The analysis of the fruits quality based on size index showed that the variety Loni and elite SL2 recorded the smallest size of size index; they are significantly differentiated versus all other elites studied. However the largest index size was recorded at SL 57(1.54 cm), it is no significantly versus index size recorded to SL5 and SL63, but significantly versus all the other eight studied elites (Fig. 4).

On average on the three years of study the elites SL15 SL24 and SL16 have the highest value of the index form, but the differences were no significantly versus Loni value recorded. The lowest index form was recorded at the SL57 (0.3 cm) this value was significantly lower with 6.7% versus Loni cv. (Fig.5)

The analysis on three years of study on the number of seeds / fruit showed that the SL 57 and SL 64, recorded the highest number of seeds per fruit, this was significantly higher versus the other elites studied, and the lowest no. seed / fruit was recorded to SL 63 (fig.6).

Evaluation of soluble solids content to the fruit elites showed that on average in the three years, the highest value was recorded to SL 57 (17.2% Brix), and the lowest value to the SL 63, who is significantly lower versus the other studied selections (Fig.7).

On average in the three years of study the highest value of firmness was recorded to SL 2, this was significantly different versus all other studied elites, but versus the Loni recorded a significantly difference with 13.6%. The lowest value of firmness was recorded to the SL 64 (15.2 gf) (fig.8).

4. Conclusions

The SL 65 recorded the highest average weight per fruit (1.44 g / fruit) that was significantly higher by 25.7% versus the value recorded to Loni cv.

The SL 57 has recorded the best value of the fruits height, the largest index size, and the highest content of soluble solids (17.2% Brix), therefore we recommend the SL 57 for fresh fruit consumption.

The highest value of firmness was recorded to SL 2 and Loni cv.

5. References

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Table and Figures

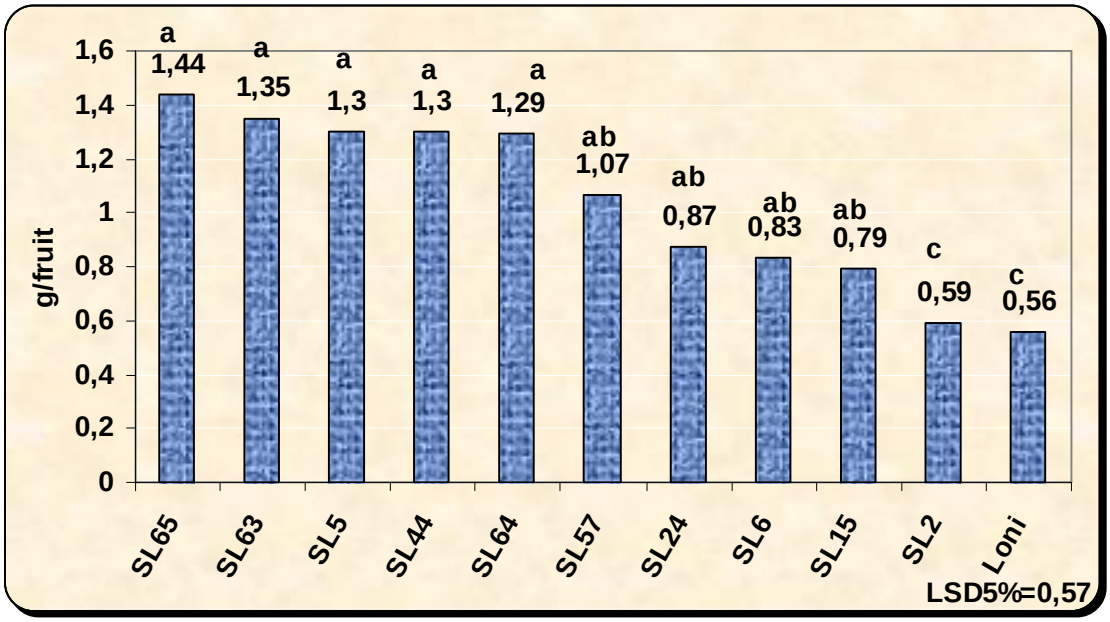

Fig. 1. Average weight of fruit

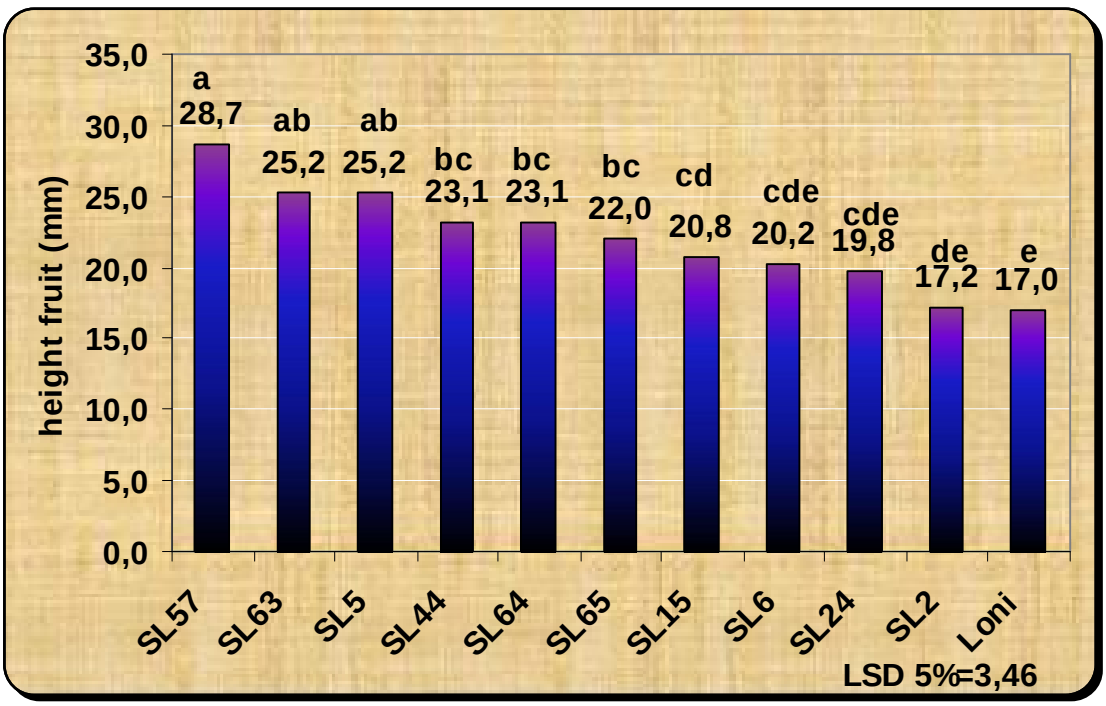

Fig. 2. The fruit height

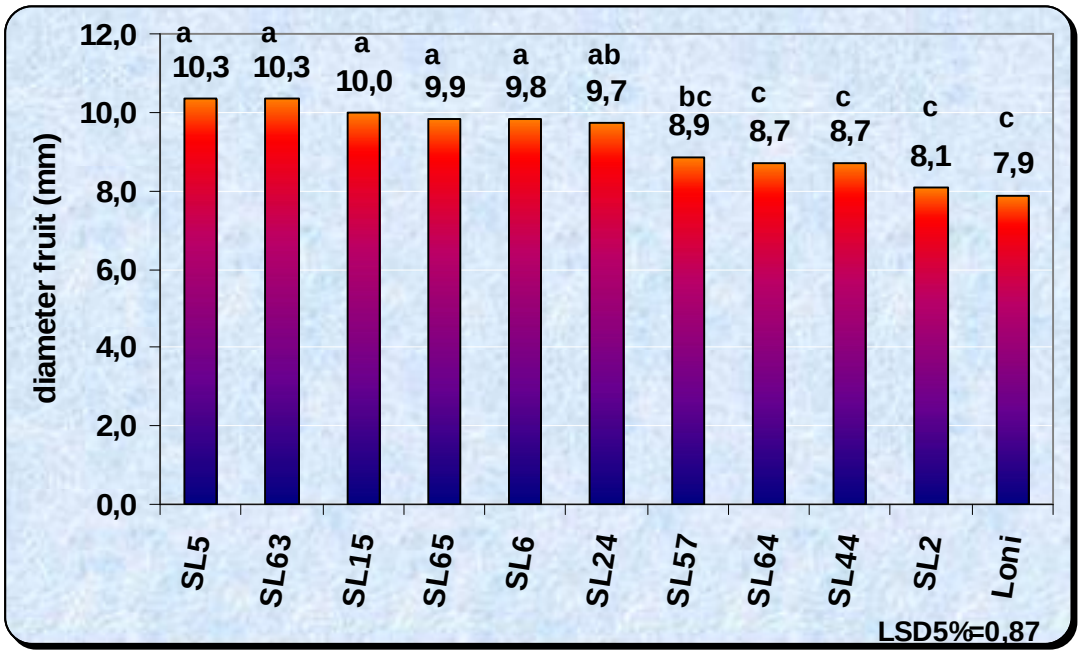

Fig. 3. The diameter of fruit

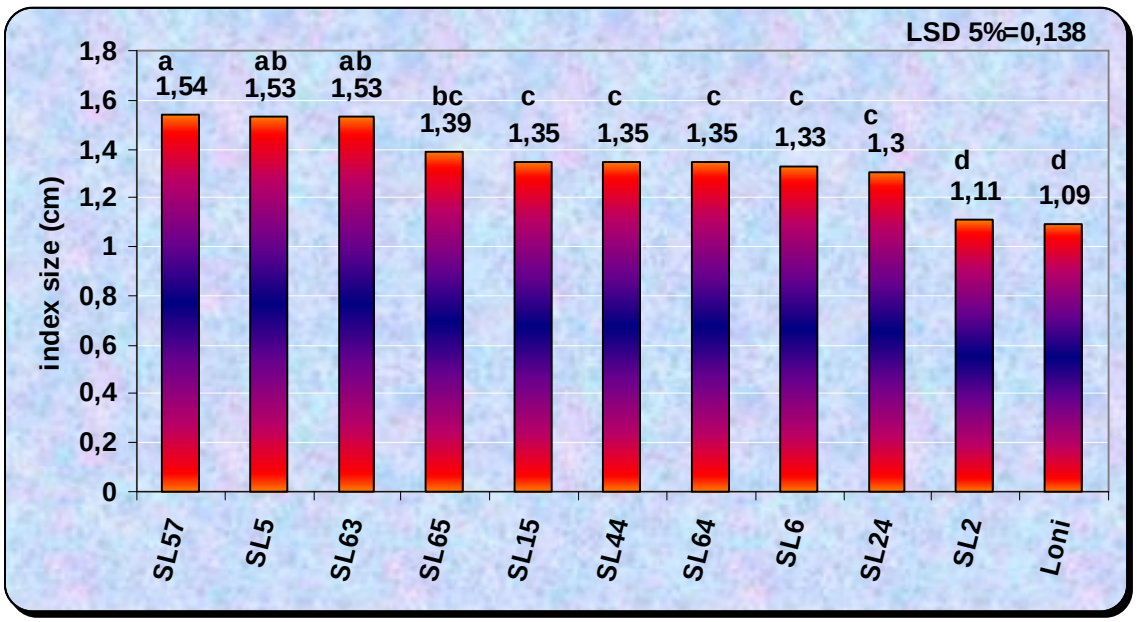

Fig. 4. The index size of fruit

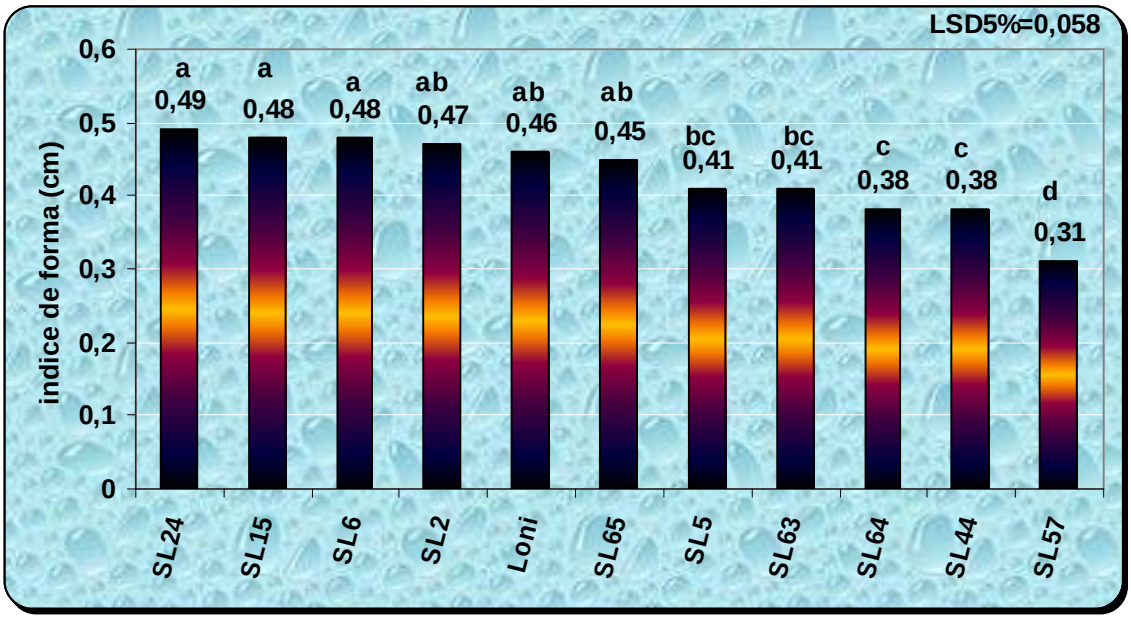

Fig. 5. The index form of fruit

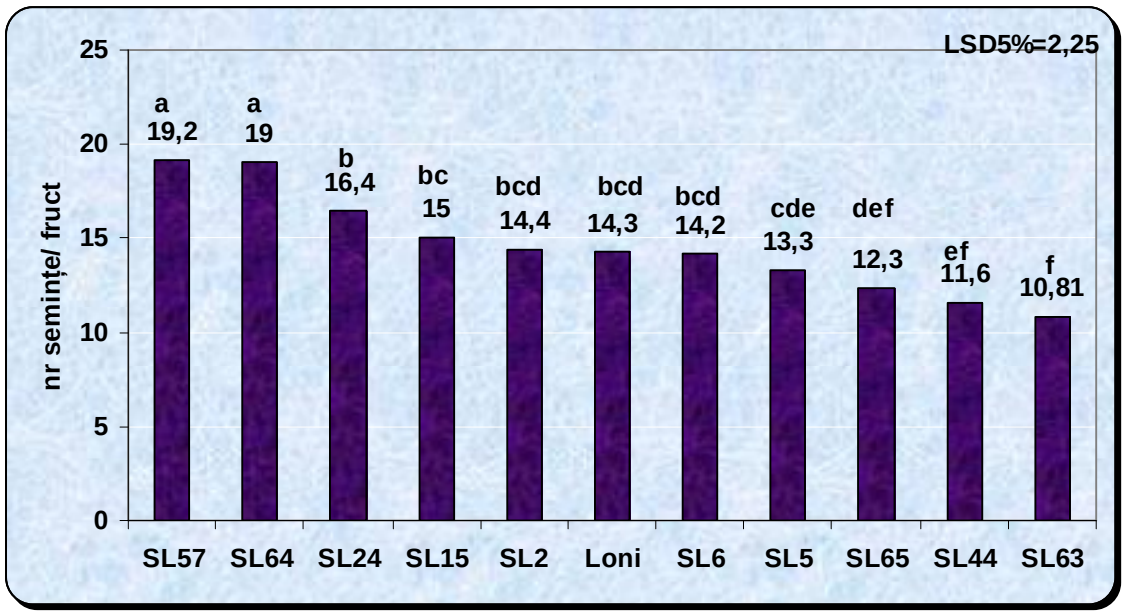

Fig. 6. The number of seeds in fruit

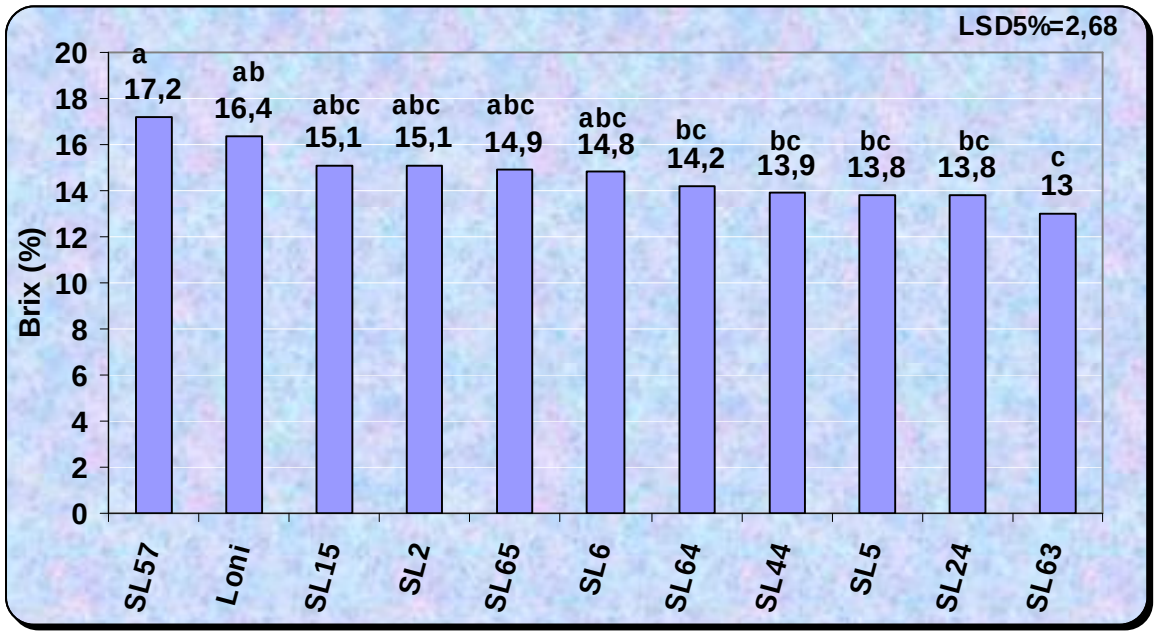

Fig. 7. The content of soluble solids (%Brix) in fruits

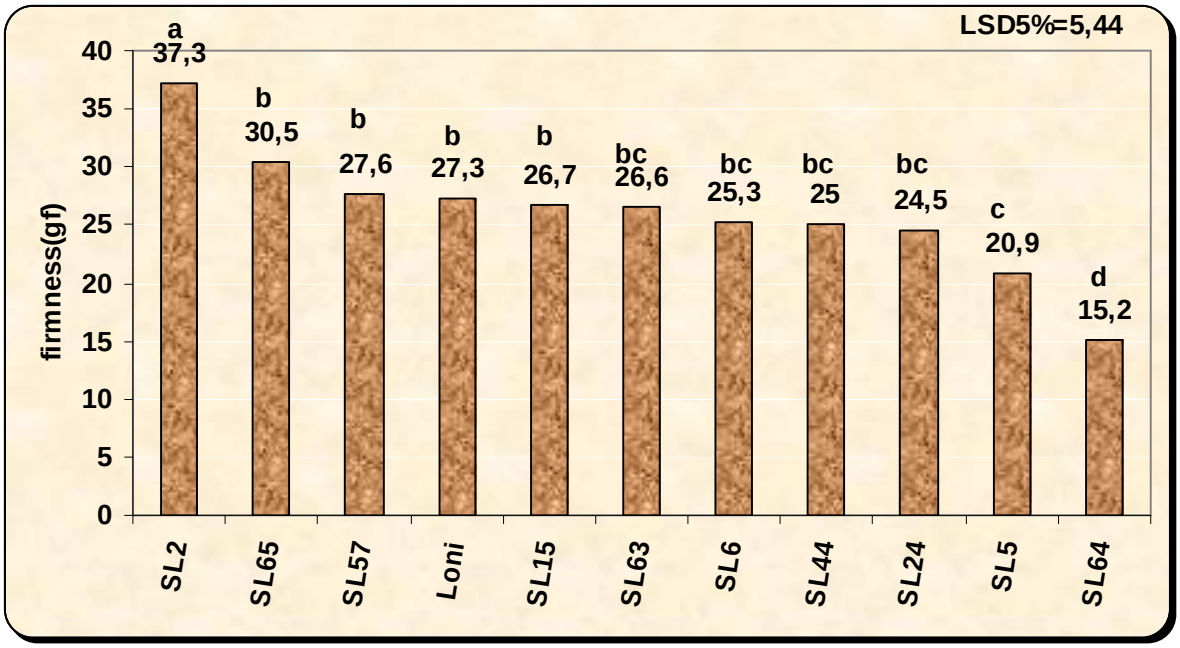

Fig. 8. The firmness of fruits