THE EFFECT OF MUSIC PRODUCED BY WINDS INSTRUMENTS ON CULTIVATED PLANTS

Ștefan POPESCU[1], Romulus MOCANU[1]

e-mail: mocanuromulus@yahoo.com

Abstract

In order to study the effect of music produced by winds instruments on cultivated plants there have been carried out two experiments at Research Station of Targu Jiu on salad crop cultivated in solarium and apple tree, Idared crop kind in the field with three treatments: without music, one hour a day music, three hours a day music during a week. With the salad crop, in the solarium without music, the average weight of a plant has been of 126.3 g, in the solarium with one hour a day music during a week the average weight grew to 142.5 g and with the three hours a day treatment it reached to 151.4 g. So, the treatment with folk music played from pipe flute and flute has determined the increasing of the salad yield by 12.8 – 19.8%. With the apple tree crop, without music, the average weight of a apple fruit has been of 113.8 g, with one hour of music a day it reached 126.1 g and with three hours a day the average weight of a fruit was of 134.5 g; the yield outputs were of 11.7 and 18.6 %. The using of music produced by winds instruments is beneficial for salad and apple tree plants.

Key words: winds musical instruments, salad, apple tree, growth

Music is defined by researchers as an ensemble of articulated and harmonious sounds. The sounds are nothing but vibration waves. So, the music is a vibratory phenomenon.

The air particles are put in motion and create waves that are perceived at a certain distance. They create other waves that are transmitted further by vibration sympathy (Shaw, 2005).

After Freelich, Popp, Del Giudio (www.grandorama.ro) the healing of many functions of human or plant organism is made through vibration sounds. These authors show that the plants grow better when music is played around them.

Their researches have demonstrated that the influence of vibration sounds of a certain frequency and intensity is manifested on the movement of the chloroplasts from the plant cell. There was recorded an intensifying of the metabolism of the plants and a more rapid growing of it.

In 1973, Dorothy R. has published a book called: „The sound of music and plants" where she presented her experiments at Colorado College using biometric chambers where there were played different tonalities of music and the daily growth of the plants has been recorded.

This way, by using a constant tonality during 8 hours the plants died after 14 days while the playing of a continuous tone during three hours then a break the plants grew abundantly being superior to those without music, after two weeks the plant reclining toward the source of the music by $15\text{-}20^0$; the beneficial music was classic and jazz but the rock music determined disease or even death of the plants.

Robertson (Robertson, 2010), after experiments in different chambers with music has emphasized the fact that the plants from the chambers where the music was played from natural instruments grew harmoniously while the plants grown in chambers where the music was played from electrical instruments that produced not natural sounds the plants became wilted.

MATERIAL AND METHOD

In order to elucidate the aspects related with the influence of folk music played from winds instruments there have been carried out researches in 2010 year at Research Station of Targu Jiu with salad plants and apple tree.

With the salad plants there have been made experiments in three solariums that made up three experimental treatments with three replications: treatment 1 – without music, treatment 2 – folk music played from pipe flute and flute one hour a day during a week and treatment 3 - folk music played from pipe flute and flute three hours a day during a week.

The salad crop kind was Amplus.

With the apple tree crop there was used the same treatments with Idared crop kind.

The experiment has been carried out during the fructification period.

[1] University of Craiova

RESULTS AND DISCUSSIONS

With the salad crop

There have been made the weighting of the salad plants from each treatment and replication after 7 days of musical treatment produced from winds instruments.

The results are written in the table below:

Table1

The weight of the salad plants in function of the musical treatments applied

Treatment	Average weight (g)	Relative weight (%)	Difference (g)	Signification
Without music	126.3	100.00	-	Control
Music one hour/day	142.5	112.8	16.5	*
Music three hours/day	151.4	119.8	25.1	**

DL 5%=15.6 g; DL1%=22.7 g; DL0.1%=34.4 g

From these data there can be observed that the using of folk music played from winds instruments has had a favorable influence on salad plants.

This way, in the solarium without music the salad plants have grown better having an average weight of 126 g (there have been weighted 15 plants).

With the treatment of folk music played from winds instruments during 7 days one hour a day the average weight of a plant has been of 142 g, the difference with the treatment without music being of plus 16.5 g.

With the variant when the plants grew in the solarium with three hours of music a day during a week, the average weight of a salad plant has been of 151.4 g, with a difference of 25.1 over the treatment without music. The signification of this treatment is even distinct.

The percentage outputs of yield are of 12.8% with the one hour per day treatment and of 19.8% with three hours per day treatment in comparison with the treatment without music.

Same results have been obtained by Vlad (Vlad, 2011) at Research Station for Vegetable Buzau who states that plants grow better with music.

With the apple tree crop there were weighted the apple fruits from the three treatments (15 fruits from each treatment) with or without music. The results are presented in the table 2.

Table **2**

The influence of musical treatments on the weight of apple fruits, Idared crop kind at Research Station of Targu Jiu

Treatment	Average weight (g)	Relative weight (%)	Difference (g)	Signification
Without music	113.4	-		Control
Music one hour/day	126.8	111.7	13.4	-
Music three hours/day	134.5	118.6	21.1	*

DL 5%=15.6 g; DL1%=22.7 g; DL0.1%=34.4 g

Analyzing the data from this table there can be observed that the using of folk music produced from winds instruments has had a favorable effect on the growing of the apple fruits.

Whether folk music is played during 7 days inside apple tree plantation one hour a day the apple fruits reach 13.4 g higher than those where no music was played which means an output of 11.7%.

When the treatment of three hours a day was applied during 7 days the fruits grew even bigger, reaching an average weight per fruits of 134.5 g in comparison with the average weight of 113.4 g where no music was played and a weight output of 21.1 g per fruit, respectively, 18.6%.

CONCLUSIONS

- In order to study the effect of folk music produced by some winds instruments (pipe flute, flute) on some cultivated plants there have been made two experiments at Research Station of Targu Jiu on salad plants from solarium and apple tree in the field that comprises three treatments: without music, with one hour music a day and three hours a day during a week.

- with the salad plants, treatment without music, the average weight of a plant has been of 126.3 g, and with the one hour and three hours per

day treatments the average weight of the plants has been of 142.5 g and, respectively, 151.4 g, reaching a yield output of 12.8, respectively, 19.8%;

- with the apple tree, the treatment without music recorded an average weight of a apple fruit of 113.8 g and with music treatments one hour a day and three hours a day the average weight of an apple fruit was of 126,8 g and 134.5 g, the yield outputs being of 11.7 to 18.6%;

- the using of folk music produced of winds instruments is beneficial for salad and apple tree.

REFERENCES

Dorothy, R., 1972 – *The sound of music and plants*, Editure Wiley and sons, New York, 96 pag.

Robertson, D., 2010 – *Text Library Positive Music,* MP3.

Show, E.G., 2008 – *Auditory system*, Nelson Thornes Ltd, Delta Place, UK.

Vlad, C., 2008 – *Conservarea biodiversității plantelor legumicole prin metode noi*, Programul Parteneriate în domenii prioritare.

www.grandorama.ro