INFLUENCE OF PLASTIC MULCH BETWEEN ROWS ON THE YIELD AND QUALITY OF WATERMELON (*CITRULLUS LANATUS L.*)

DZSENIFER NÉMETH, NOÉMI KAPPEL, GÁBOR BALÁZS

Szent István University, Department of Vegetable and Mushroom Growing
Budapest 1118 Ménesi str.44, Hungary
Nemeth.Dzsenifer@kertk.szie.hu

The watermelon (*Citrullus lanatus,* L.) is an important and valuable vegetable crop that has in Hungary the 3rd largest cultivated area in open field.
Melon growers face continuous challenges, one of the main problems is the lack of labory. Growers are increasingly looking for technology solutions that have the least manual labor needs. The appearance of the plastic mulch between the rows was a major step forward in the growing technology.
The main objective of our two-year (2016, 2017) experiment was to compare the effects of different colored plastic mulches between rows on the quantitative and qualitative values of the yields. Our experiment was set up in the largest and most intensive melon growing area in Hungary, at Dombegyháza in Békés County. 5 rows were planted out, in 2016 with 4, in 2017 with 3 repetitions. 35 plants per repeat were used. Between the rows was 2,2 meter and inside the rows between two plants the distance was 0,5 meter. After planting, the seedlings were covered with a lowplastic tunnel.
Our investigations were carried out with the *Grizzly* watermelon variety and during the experiment 5 different colors of plastic mulch (purple, transparent, green, black, and butter coloured) were used, the control was uncovered. The width of the foils was 180 cm in both years with 0,02 mm thickness.
In the field we examined the average weight of the fruits. The fruits were balanced, in both experimental years the values ranged from 7,5 to 8 kg. In the case of purple and green covers, the average values were around 8 kg in both test years.
During our laboratory measurements we examined the following nutritional characteristics: invert and reducing sugar content, refraction and acidity. Reducing sugar content was 4-6% in both experimental years and invert sugar content in 2016 was over 8% except for green covering, in 2017 was also over 8% except for purple covering. Highest reducing sugar (5,41%) and invert sugar (8,67%) content were obtained on the transparent foil. The refraction was between 10-12 Brix ° in both experimental years, with the highest average in 2017 on transparent colored coverage. The acid content was between 0,08 –

0,1% in each test year, except in the case of in 2017 on purple cover, where a slightly lower value were obtained.
For the statistical evaluation of our field and laboratory results, IBM SPSS 23.0. statistical software package were used. Our experimental results were evaluated by two-factor variance analysis (ANOVA) for all variables.
Based on the results of the two years of our study we can state that the different color of the plastic mulch did not show significant differences in the examined quantitative and qualitative parameters. Using plastic mulch soil covering between the rows in the watermelon production is likely to continue due to the fact that the fruits remain clean, between the rows the soil remain weed-free, and the problem of labor shortage can be solved with this technology.

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