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Title of thesis:

Comparative Examination of Eggplant (*Solanum melongena* L.) cultivars

Eggplant (*Solanum melongena* L.) is one of the most popular vegetables grown in the world and its cultivation is increasing globally. As a result, production has increased in recent years. It is important to provide food with high nutritional values for consumers and the high nutrient content of eggplant makes them appealing food to consume. Therefore, researchers are more interested to produce different types of eggplant variety which contain many nutritional values and also gives good quality yields.

From oval and round to oblong or pear-shaped, eggplant come in all different shapes and sizes. Many parameters can be considered to differentiate the variety. The shape and colour depend on the variety. And also, the size of the plant, yield and time of ripening are all different between the eggplant cultivars. Cultivars with purple, oval fruits are commonly grown in Europe and the Americas.

The study's goal was to examine the quality attributes of four eggplant cultivars, namely Blackmoon, Basalto, SV2162EV, and Madonna, especially measuring their fruit shape, fruit colour, total sugar content, dry matter content, antioxidant content and polyphenol content for all cultivars.

In our findings, Madonna and Basalto had the highest fruit shape index. The Brix value turned out to be higher in Madonna and Blackmoon; nonetheless, there was a little difference between them. In term of skin colour, the significant difference among the cultivars were found in all the values L^* , a^* , and b^* colour dimension. Basalto cultivar showed the least colour effect. However, the dry matter content did not show significant difference between the cultivars. The antioxidant content was highest in Madonna and Blackmoon. And the polyphenol concentration in the fruit pulp varies significantly between cultivars, with Blackmoon having the highest content and showing strong antioxidant potential. These findings suggested that total polyphenol content may be somewhat responsible for antioxidant activity.

In conclusion the four cultivars varied depending on the physiological parameters selected in the experiment. The results indicated that there is a significant variation in most of the measurements. Overall, Madonna and Blackmoon cultivars performed better. However, more research is required to improve the colour of the fruit.