

Title: A rapid and low-cost method for evaluating the uniformity of grape

Abstract: Fruit uniformity links fruit industries with quality and yield. The uniformity of grape fruit berries is particularly important for guiding the process and increasing the value of the grape breeding and cultivation industries. Therefore, how to accurately and effectively evaluate the uniformity of grape fruit is an important research topic. In this paper, we developed a novel method, named as EvaGrape, to quickly and accurately evaluate the uniformity of grape fruit. By identifying the contour of the berries, its area (reflecting the size of the fruit), color and other characteristic parameters are extracted and used to calculate the uniformity of a bunch of grapes. Our results showed that EvaGrape is capable of effectively performing the non-destructive identification judgment on the uniformity of grapes of different varieties at different maturity stages, including immature berries. Thus, EvaGrape has great potential to be applied in the large-scale grape planting and processing industries.