

Tomato - Characteristics, processing and future trends in automation for smallholder processing industry: A short review

ABSTRACT

Tomato is one of a globally important warm-season vegetable crop. Overall, the whole fruit is edible. It contains sorbitol, phenylalanine, putrescine and vitamins such as B1, B2, and B3. Tomato also contains carotenoids such as α -carotene, β -carotene, lycopene, and xanthophylls. In addition, they also contain phytosterol, essential oils (terpenes geraniol and farnesol), flavonoids (quercetin, kaempferol, and isorhamnetin) and alkaloids (saponins). Since the processing of tomatoes affecting the content of nutrients, it is important to understand the details on how tomatoes are being processed. Tomato farming in Malaysia is mainly concentrated in the highlands. Kundasang, Sabah is one of the few areas where smallholder-farming tomatoes are planted due to its suitable environment and temperature. Although tomatoes from smallholder farmers are usually for direct consumption, stockpiling occurred recently due to movement-controlled order enforced in Malaysia to control COVID-19 transmission, affecting the livelihood of smallholder farmers in Kundasang mainly due to logistics issues. Therefore, the purpose of this paper is to review on tomato, its nutrients content, and processing technology giving importance on aspect of nutrient retention by monitoring and controlling process parameters using low-cost IoT-based automation and its future directions for smallholder tomato farmers.