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Modeling of respiration rates in *Coccinia grandis* (ivy gourd) at different temperature

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Ivy gourd is one of the indigenous vegetable grown in India. The edible part of the ivy gourd is fruit and are mostly used for culinary purposes and also consider as a nutritious vegetable. Though it is a nutritious vegetable, the shelf life of ivy gourd is only 3-4 days in room temperature and 7-8 days in refrigerated conditions. Till now no research has been carried on the rate of maturity, shelf life, design of packaging materials and storage conditions. So, to design the storage conditions and to optimum the package for ivy gourd the information on the physiological index of metabolism i.e respiration rate are essential. Measurement of Respiration rates were carried out by conducting experiments to determine the influence of different temperatures (10, 15, 20, 30, 400C) on the variations in the O2 and CO2 concentrations. Respiration rates were calculated and presented as the rate of release of CO2 or the rate of consumption of O2. Whole experiment is carried out in an air-tight container which is placed in the environmental chamber and the variations in the gas concentrations are measured by using an gas analyzer for every 30 min interval O2 and CO2 % are measured until the O2 % fall below 1%. The Co2 production and O2 consumption at 40oC is high then at 10oC.The rate of respiration at 40oC i.e O2 concentrations decreased from 19.5 to 0.66 %, and the rate of release of CO2 decreased from 106.1 to 53.6 mℓ kg-1 h-1 Using the respiration data, predictive models were developed for calculating the CO2 release rate and O2 consumption rates

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