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## Effect of accumulated temperature on the growth and development of tomato fruits in flowering clusters

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Tomato fruits ripened 57 in the first, 71 in the second, 78 in the third, 57 in the fourth, 58 in the fifth, 58 in the sixth, 48 in the seventh, 51 in the eighth, and 51d in the ninth flower cluster after fruit set when plants were grown under environmental conditions at whole growing season. The different responses to accumulated temperature were observed when the accumulated temperatures gave to the individual clusters while the plants were grown in the greenhouse. These data were used to develop an individual clustering thermal model for fruit maturation. In previous model, the overall clustering thermal model was a poor predictor of the time of ripening. However, this thermal model was made by individual cluster. The seed of tomato (*Lycopersicon esculentum* Mill 'Tabor') were sown in to seed trays containing a peat based seed and were germinated in the place of raising seeding in a minimum 24<sup>o</sup>c. Then, plants were moved to greenhouse (Chun-An City, South Korea) in which experimental treatment were applied. In the field experiment, 100 plants of tomato were selected during total growth period (1<sup>st</sup>-9<sup>th</sup> flower cluster). Every week, the height and diameter of tomato were measured at individual cluster after fruit set. The volume of tomato was estimated according to the relationship between theoretical volume and actual volume. For this relationship, the height and diameter of 2000 fruits were measured and the relationship was a "y=1.1122x+12.545 (r<sup>2</sup>=0.9534)". Here, the relationships between accumulated temperature and fruit volume were obtained based on average fruit volume in individual cluster.



### Biography

Ju Young Lee has a strong background in Ecological Engineering field based on Statistical and Mathematical Modeling about plant growth and yield model. He has served in main positions for Smart Farm Projects with governmental funds.

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