CRACKING OF TOMATO FRUITS IN ORGANIC GREENHOUSE TRIAL

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INTRODUCTION

Fruit cracking is a complicated physiological disorder, which is common during ripening and can cause heavy yield loss. Cracking occurs when the internal fruit expansion is faster than that of the epidermis. Cracking can occur all stages of fruit growth but as fruit matures they become more susceptible, especially as color develops.

AIM

The aim of the research was to study how the Estonian weather conditions influence the cracking of tomato fruits of different weight and origin.
In the study were included:
- 3 new for Estonian conditions tomato cultivars - ‘Auris’F₁, ‘Minaret’F₁, ‘Tolstoi’F₁
- 2 cherry type cultivars - ‘Gartenfreude’ and ‘Sun Baby’

Three fruits groups:
- large > 90g
- medium 45g-90g
- small < 20g

The trial was carried out in organic conditions in unheated polyethylene greenhouse in 2014 and 2015.

Soil was fertilized with bovine manure at the rate of 6 kg m⁻² as the main source of fertilization. Chicken manure and seaweed solution was used three times during growing period as the additional fertilization.
RESULTS

There were significant differences between the years in cracking of large fruit cultivars and medium fruit group (except ‘Maike’). The lowest share of cracking had the cherry tomatoes and the highest had the large fruit group.
The most cracking resistant were the small fruit ‘Gartenfreude’ and ‘Sun Baby’ and medium fruit ‘Maike’ having minimal influence of the weather condition of the trial year.

Resistance of cultivars to cracking became more evident in the year described as not in favor to cracking.

It can be concluded that the bigger the fruit the higher the probability to fruit cracking. But cultivars less prone to cracking can be found also among large fruit group (‘Minaret’ F₁).

Better adapted to Estonian conditions local ‘Malle’ F₁ had advantage having bigger share of marketable yield despite of its quite high share of cracked fruits.