



# Performance of Greenhouse Tomato (*Lycopersicon esculentum* Mill.) under Compost and other Mulch Types

**Samih Abubaker**

[Samih\\_abubaker@yahoo.com](mailto:Samih_abubaker@yahoo.com)

# INTRODUCTION

Fertilization types and materials used as mulches are considered **key soil management practices** for crops production. Mulch is any material applied to the soil surface for protection or improvement of the area covered. **Mulching provides an important method for water and soil usage sustainability.**

**The potential of mulches to improve soil structure, increase organic matter, and establish patterns of nutrient cycling more similar to natural ecosystems has been recognized**

# OBJECTIVES

**To evaluate the potential effects of different mulch types on growth and yields of fresh market tomatoes under drip irrigation in plastic house conditions**

# **MATERIALS AND METHODS**

- **Growing season:** 2013-2014
- **Solarization** of the soil against soil-borne pests and weeds was applied during the summer season
- **Treatments :** 1) black plastic, 2) tuff gravel, 3) clear plastic, 4) compost, 5) no mulch (control), 6) crushed stone, and 7) shredded wood, were arranged in a **randomized complete block design** with three replicates
- **Variety:** 'Neuton'
- **Drip irrigation** system was used to irrigate and to fertigate

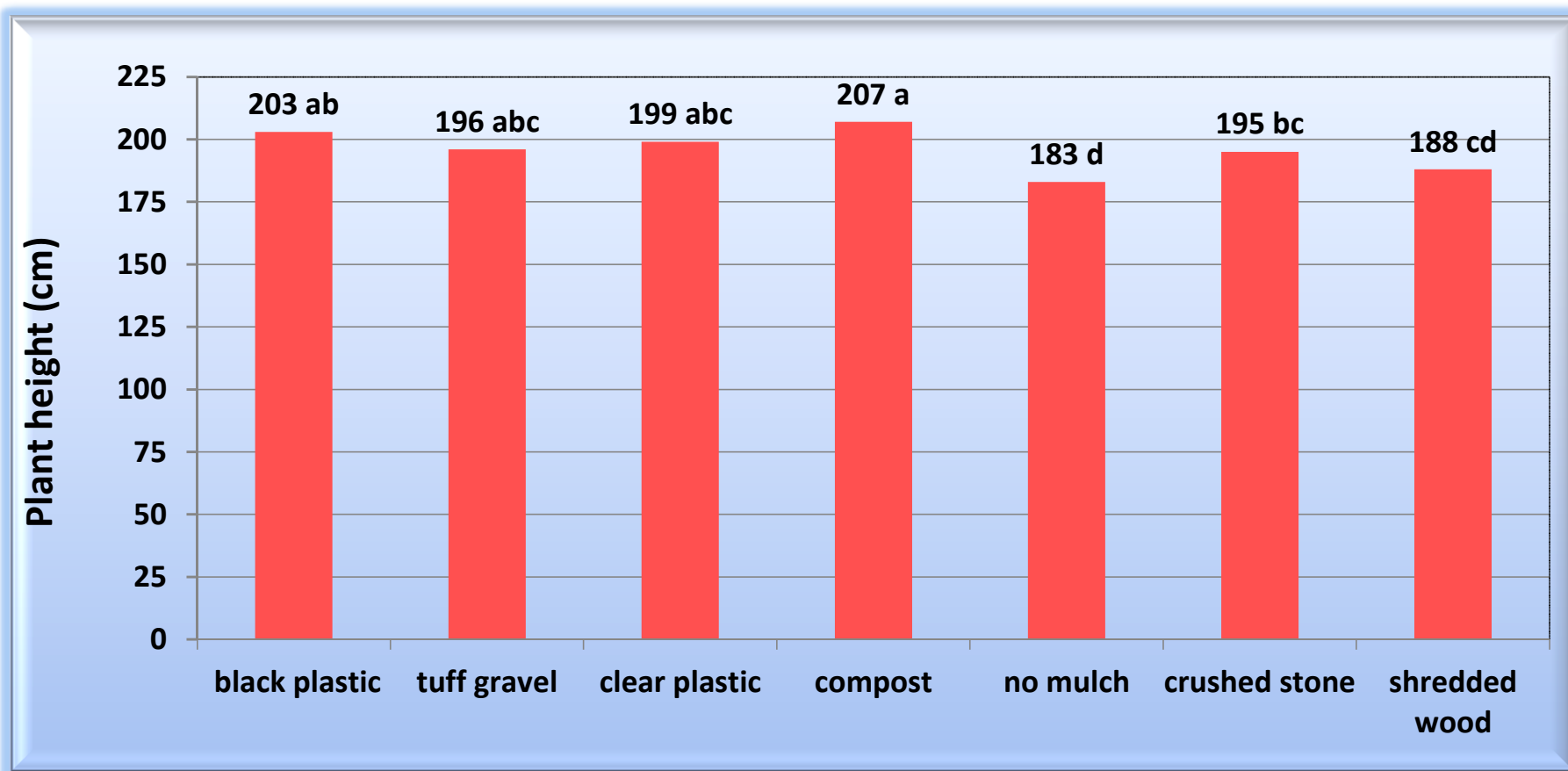


**Total yield** was determined by recording the consecutive weights of **twenty-four hand harvests** from March 6, to June 10, 2014 at fruit ripe stage. Total yield was subdivided into three categories including; **early, medium, and late** yields consisted of 8 harvests each.

Data obtained was **statistically analyzed** as for the randomized complete block design and treatments means were compared using the **LSD at 5% level** of probability using **SAS/STAT** Version 9.2.

# RESULTS AND DISCUSSION

Figure 1 :Plant height of greenhouse tomato under different types of soil mulches.



**Figure 2 : Stem diameter of greenhouse tomato under different types of soil mulches.**

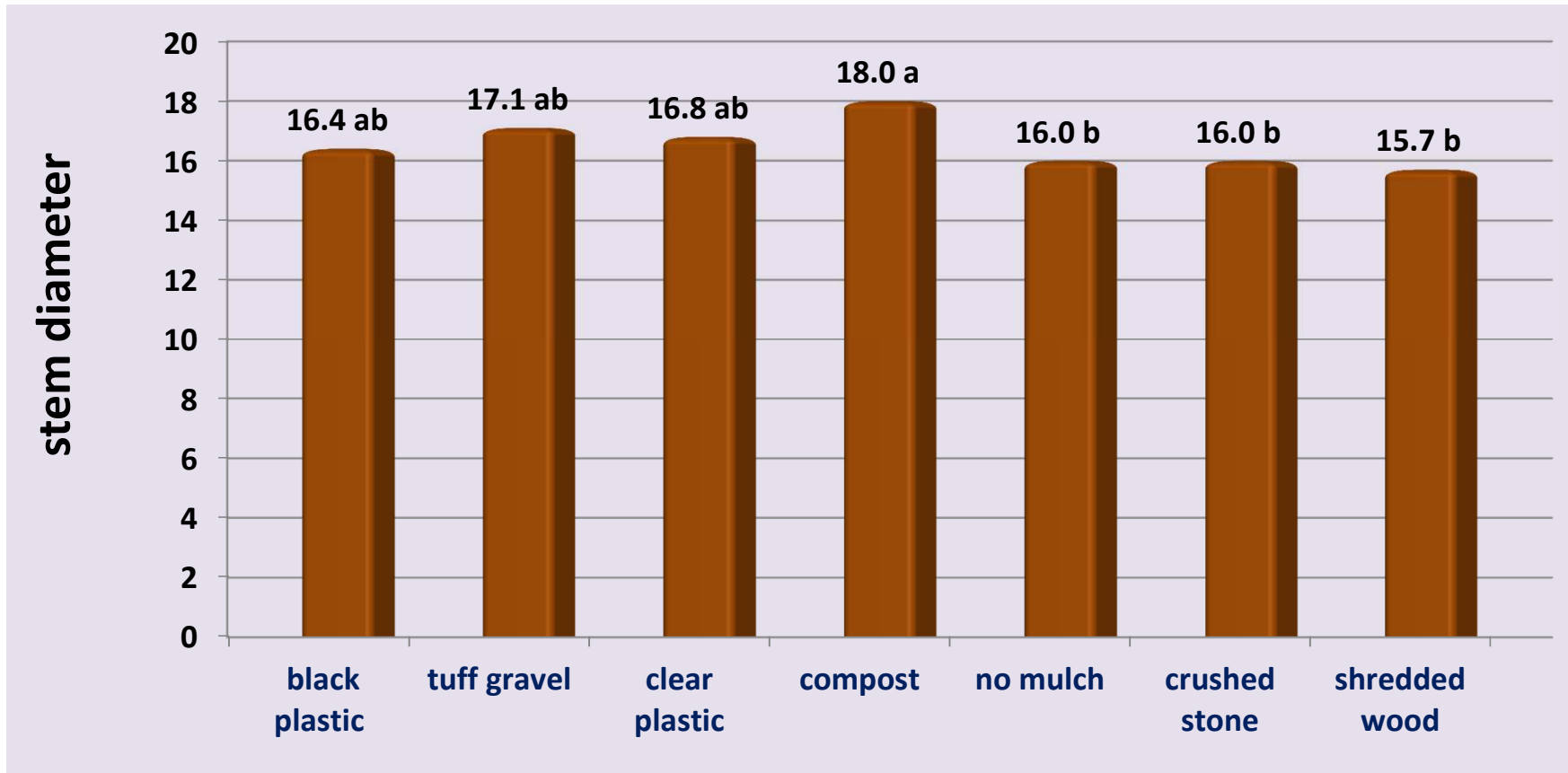
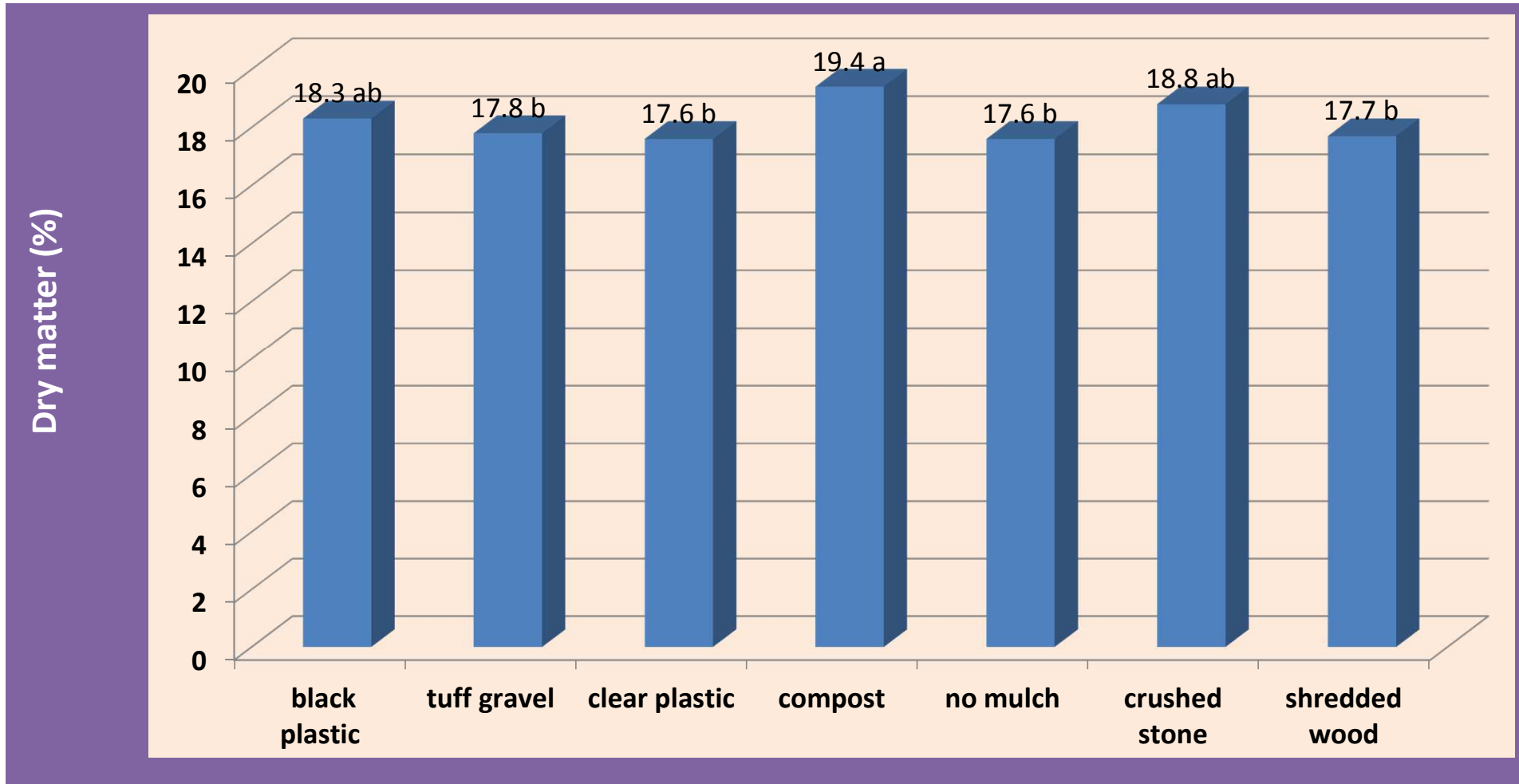
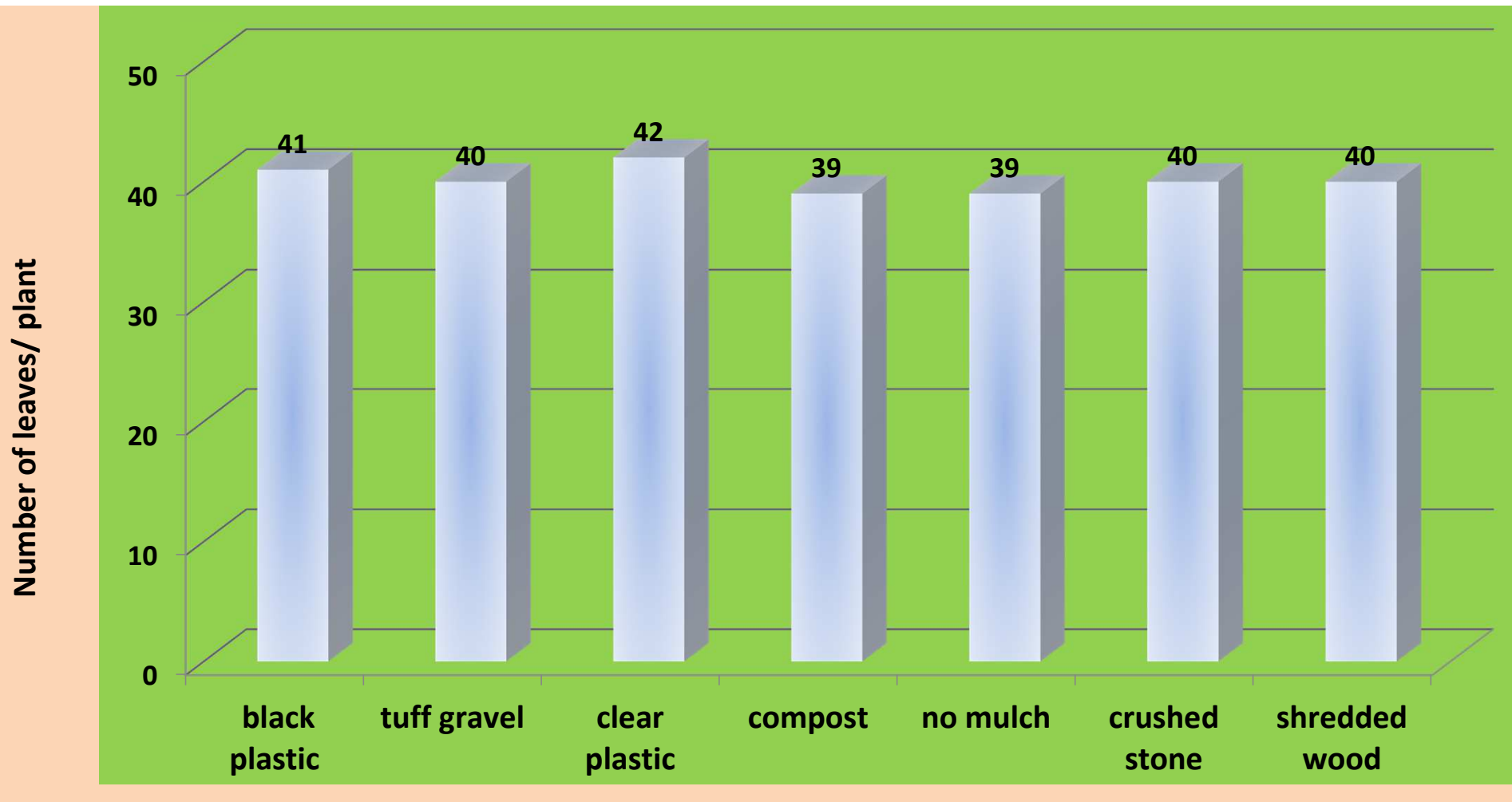


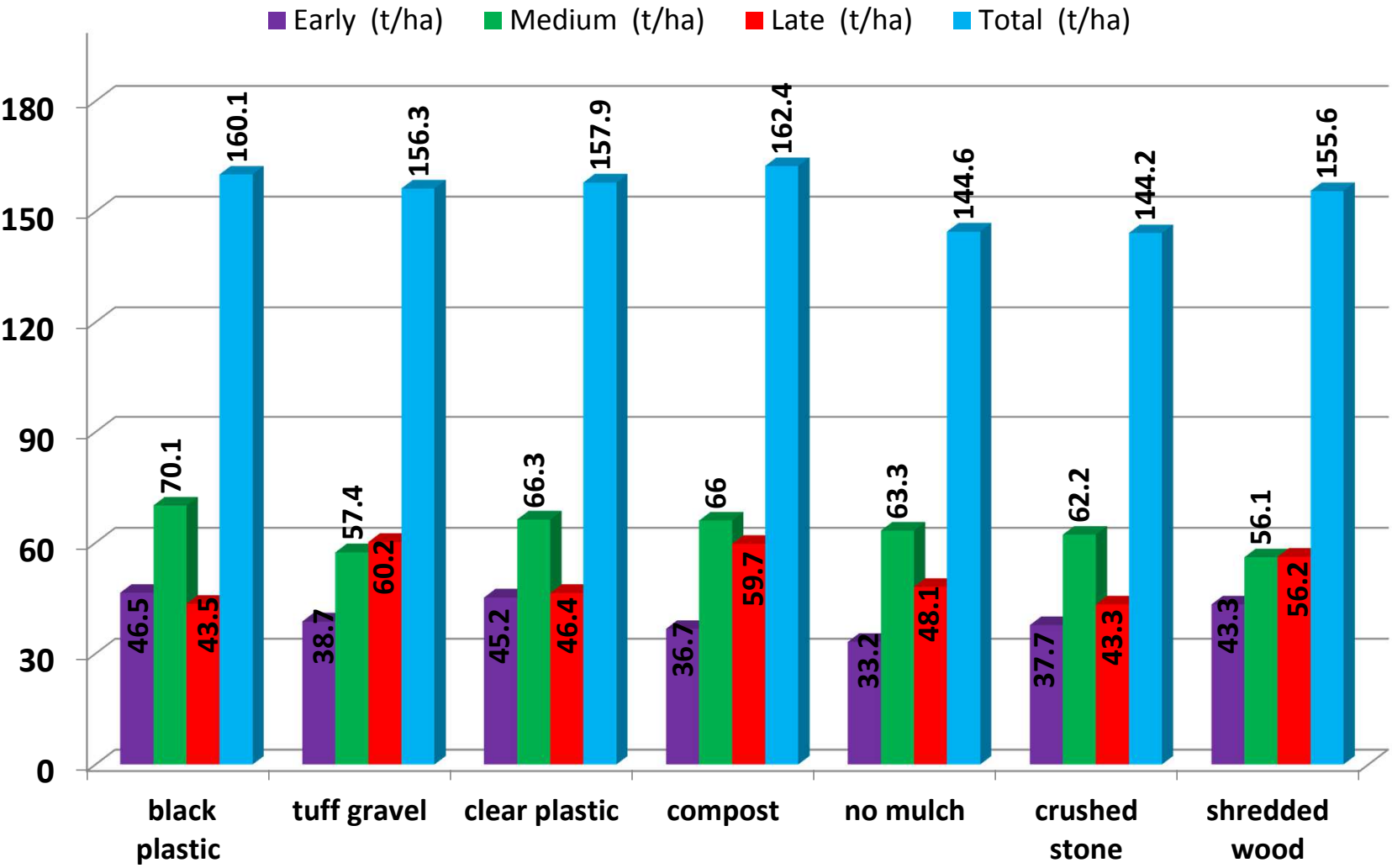
Figure 3 : Dry matter of leaves & stems (%) of greenhouse tomato under different types of soil mulches



**Figure 4 :Number of leaves/plant of greenhouse tomato under different types of soil mulches.**  
(nsd)

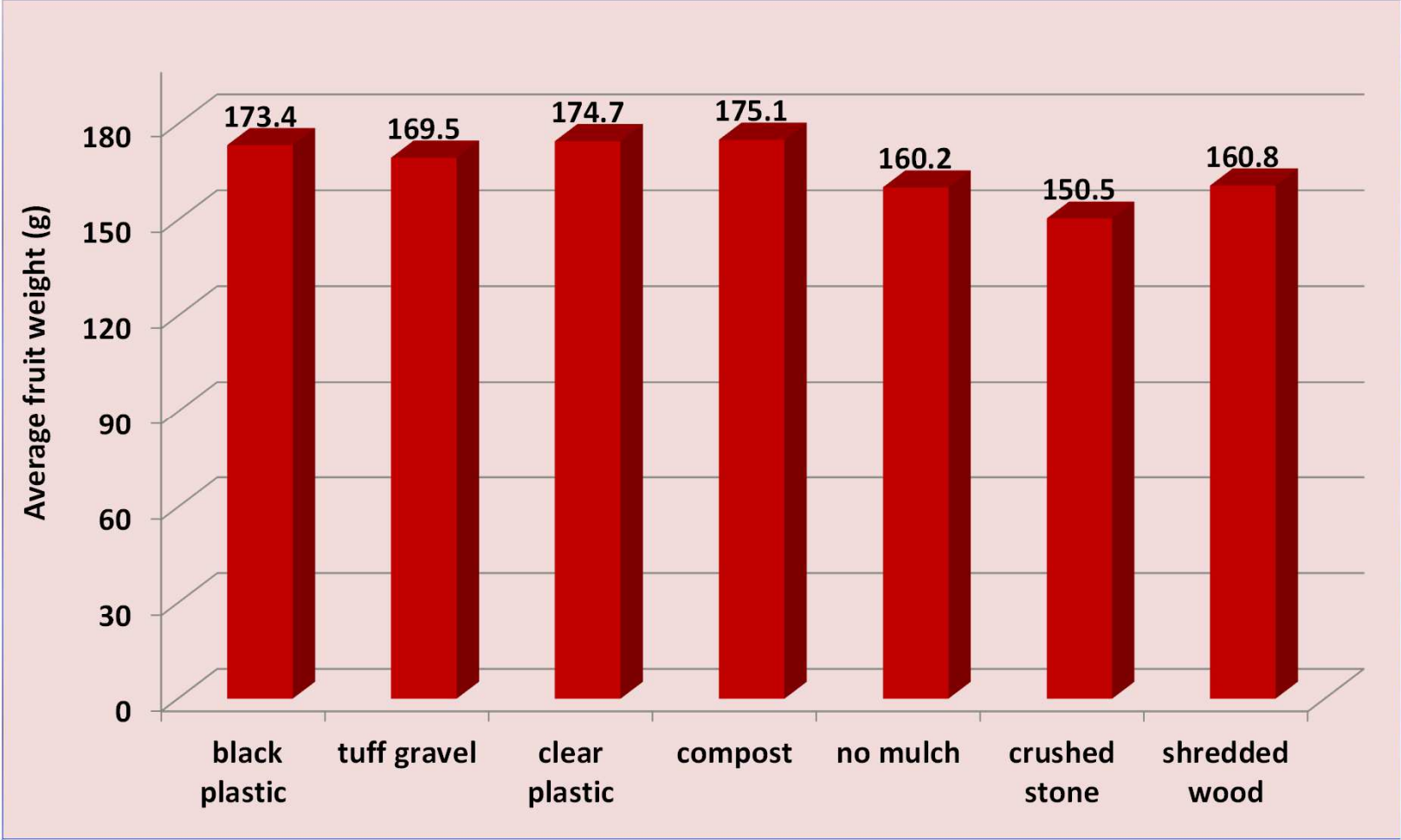


**Figure 5 :Yield (early, medium, late and total) of greenhouse tomato under different types of soil mulches**

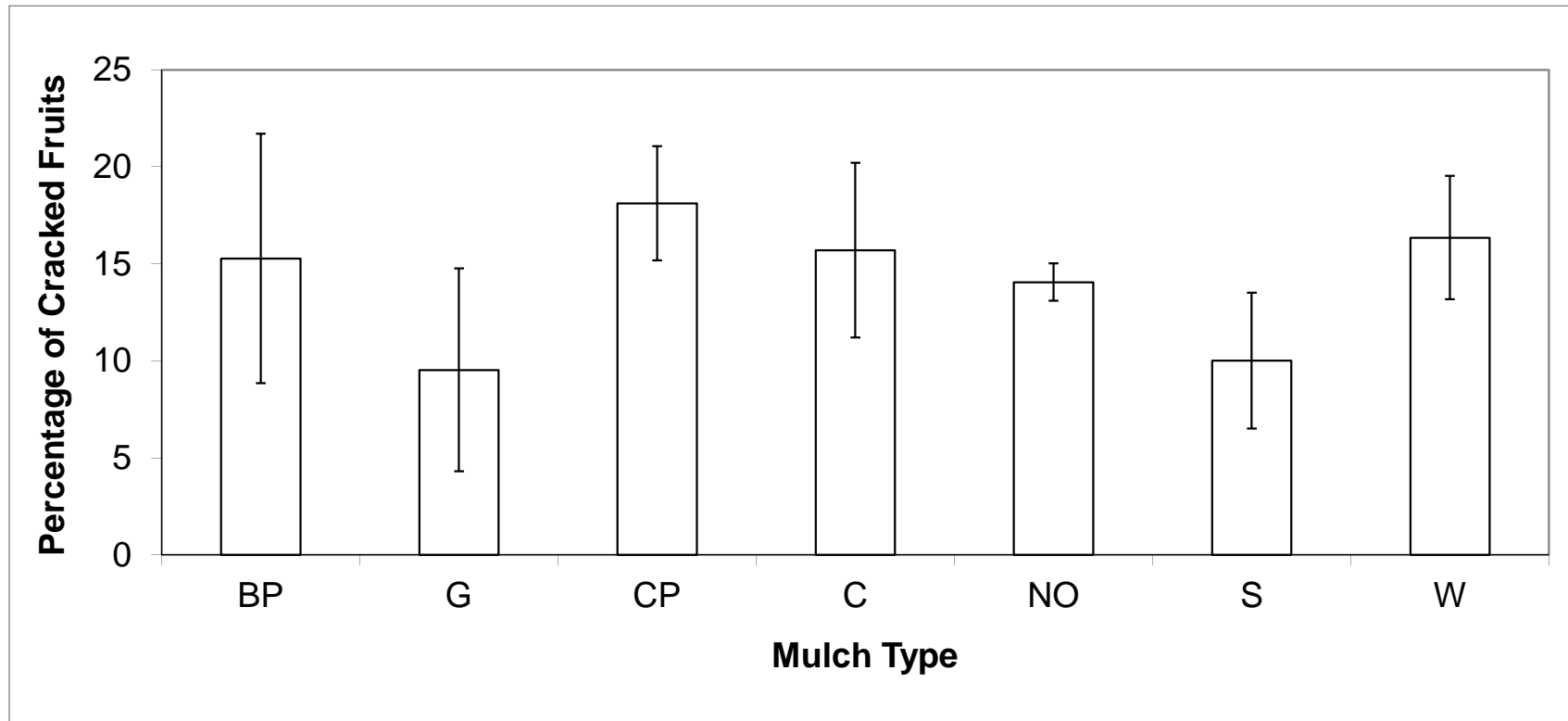




**Figure 6: Average Fruit weight (g) of greenhouse tomato under different types of soil mulches**



**Figure 7: The percentage of total cracked fruits of greenhouse tomato under different types of soil mulches. (nsd)**



## CONCLUSIONS

Soil mulches showed **significant effects** on tomato growth vigor, early, medium, late, and total yields. However, **compost and black mulches** showed the most desirable impacts on growth and yielding performance



**Wish You a Fruitful Meetings**

**Thank You All !**