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# The Effect of Compost Fertilizer on the Quality of Tangerine of the Batu 55 Variety (*Citrus reticulata* Blanco)

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**Abstract**
This study aimed to compare the quality of Batu 55 tangerine (*Citrus reticulata* Blanco) fruit cultivated at PT. Kusuma Satria Dinasari Wisatajaya (Kusuma Agrowisata), Batu City, East Java, with the quality description of the national superior variety as stipulated in the Decree of the Minister of Agriculture No. 307/Kpts/SR.120/4/2006. The research was conducted for approximately four months, from September to November 2025, using a comparative research approach. Plant sampling was carried out using a systematic sampling method, involving 23 sample trees selected from a total population of 150 trees in Block A2. The observed variables included the number of fruits per tree, fruit diameter, fruit weight per fruit, and fruit sweetness level (% Brix). Compost fertilizer was applied at a dosage of 30 kg per tree as the cultivation treatment. The collected data were analyzed comparatively by contrasting field observation results with the official quality standards of the Batu 55 tangerine variety. The results indicated that compost application improved several physical quality attributes of Batu 55 tangerine fruit, particularly the number of fruits per tree, fruit diameter, and fruit weight, while the fruit sweetness level did not reach the standard value. Overall, the fruit quality generally met the characteristics of the superior variety, although variations were influenced by environmental conditions and cultivation practices. This study provides useful information for evaluating fruit quality and supporting sustainable cultivation of Batu 55 tangerines.

**Keywords**: Batu 55 Tangerine, Compost Fertilizer, Fruit Quality, Superior Variety, Comparative Analysis.

## Introduction

Oranges (Citrus sp.) are one of the most abundant agricultural commodities in Indonesia. One of the superior orange varieties originating from Batu City, East Java, is the Batu 55 tangerine (Citrus reticulata Blanco) (Ariani et al., 2024). This variety is known for its good adaptability to highland conditions and promising market opportunities (Utami et al., 2024). Batu 55 tangerines are generally medium to large in size with relatively thick, easy-to-peel skin, bright orange flesh, and a sweet flavor with a slight sour sensation (Budiyati et al., 2021). Based on consumer preferences, the most popular Batu 55 tangerines are large with dark green skin, a fresh, sour flavor, and a yield of between 7–8 fruits per kilogram (Febrianto, 2024). In terms of chemical quality, this variety has a vitamin C content of 26.4%, and a total soluble solids value or sweetness level ranging from 10-12 brix, which meets quality standards for the domestic market. Thus, it has high potential for marketing as fresh fruit or processed raw materials (Hermawati, 2022; Zakiyyah et al., 2022).

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Based on data (Badan Pusat Statistika Jawa Timur, 2023), tangerine production reached 14,064,149.76 quintals. However, in 2024, production decreased to 9,986,227.86 quintals (Badan Pusat Statistika Jawa Timur, 2024). One of the tangerine producing areas in East Java is Batu City, where PT. Kusuma Satria Dinasasri Wisatajaya, better known as PT. Kusuma Agrowisata, is located (Zakiyyah et al., 2022b). This company has an Agrotourism Division, which operates in the tourism industry, prioritizing agricultural development with a focus on agrotourism through fruit picking tours (Purwaningrum, 2020). One of the annual agricultural commodities cultivated for fruit picking tours is the Batu 55 variety of tangerine. Managing citrus fruit picking tours requires maintaining fruit quality standards and agricultural practices to produce high-quality fruit, attracting and increasing the number of visitors and building a positive image for PT. Kusuma Agrowisata (Mistriani et al., 2024)

The quality of citrus fruit is determined by physical characteristics, including size, weight, diameter, and volume, as well as by chemical components such as vitamin C and sugar levels, which influence the fruit's flavor (Marta Nadapdap, 2024). Fruit quality is a key technical aspect that determines the attractiveness and success of fruit picking tourism products, as good fruit quality can significantly support the achievement of the goals and objectives of the fruit picking tourism program (Ari Cahyani et al., 2022). Fruit quality also strongly influences consumer preferences, with fruit quality playing a dominant role in shaping consumer choices regarding citrus products offered (Septiani & Somadi, 2025). In the context of fruit picking tourism, the activity of picking fruit directly from the tree provides a tangible and interactive experience for tourists, making perceptions of fruit quality a crucial factor in creating tourist satisfaction (Siswadi et al., 2024). Consumers, as crucial assets for business sustainability, demand attention to levels of satisfaction, with fruit quality and its attributes being a key factor in shaping customer satisfaction (Rizka Fitri Clarista, 2022). he citrus fruit quality attributes most considered by consumers in purchasing decisions include taste, size, type, and texture (Imanda, 2023)

Organic fertilizer is a crucial effort to increase agricultural production while simultaneously improving environmental quality (Dewi & Afrida, 2022). Organic fertilizers are fertilizers derived from various natural materials, such as animal waste, animal parts, and plants, which are rich in minerals and play a role in soil enrichment (Hamim, Ahmad Husni; Muhidin; Ruswandi, 2022). The use of organic fertilizers plays a role in increasing soil fertility physically, chemically, and biologically, and can also make the use of inorganic fertilizers more efficient (Murwindra et al., 2021). The application of organic fertilizers can significantly increase soil porosity by 20%, aggregate stability by 30%, and water absorption capacity by 25%, accompanied by increased levels of nitrogen, phosphorus, and potassium, indicating that organic fertilizers not only improve the physical structure of the soil but also increase soil fertility (Marta Tristanti Mendrofa & Gulo, 2024). Furthermore, organic fertilizer can increase soil microbial activity, improve soil structure and porosity, and support more efficient nutrient transformation (Widianingsih Merlina Mery et al., 2025). These positive impacts are reflected in increased plant growth, production, and fruit quality, including increased branch number, fruit size or grade, and total dissolved solids (TSS), while also increasing nutrient content in the soil and plants (Muas et al., 2020).

Several previous studies have demonstrated the importance of organic fertilizer application for plant growth and development. Organic fertilizer treatment on tangerine plants has been shown to significantly increase fruit weight, fruit diameter, and sweetness compared to controls without organic fertilizer, supporting findings from horticultural experiments related to improved citrus fruit quality and yield (Amnani, 2023). Organic fertilizer application has also been reported to enhance the growth of citrus seedlings because its nutrients play a crucial role in improving soil structure and increasing the availability of nutrients needed by plants during the early stages of growth (Mario et al., 2020). The application of organic fertilizer in the correct dosage not only serves as a source of nutrition but also

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has a very significant influence on the overall growth and development of citrus plants, making organic fertilization a crucial factor in optimizing sustainable citrus cultivation (Saraswati, 2022). The application of organic fertilizer in the correct dosage can also have a significant effect on the number of fruits per plant (Nuranjani et al., 2025). Furthermore, fruit plants fertilized with organic fertilizer generally show better growth and development processes, which ultimately have an impact on increasing plant productivity and improving the quality of the resulting fruit (Saputra, 2025).

## Literature Review

### Classification of Batu 55 Tangerines

The Batu 55 tangerines cultivated in the Batu area originated in China and were planted in Indonesia during the Dutch colonial period. These tangerines demonstrated excellent growth and development in the Batu and Punten regions. In an effort to identify superior citrus varieties, the Dutch government held a citrus competition in Batu. At the time, the Batu tangerines won, but without a specific name, they were subsequently named "Batu tangerines" in reference to their region of origin. To facilitate observation and evaluation, the tangerines were planted according to a map and numbered sequentially, with approximately 100 trees. Based on the evaluation results, the plant with the best growth, productivity, and fruit quality was number 55 compared to the other trees, hence the name Batu 55 Tangerine (Directorate General of Horticulture, 2018).

The classification of Batu 55 tangerine plants according to (Sandi Prayoga, 2024) is as follows:

Division : *Spermatophyta*

Subdivision : *Angiospermae*

Class : *Dicotyledonae*

Nation : *Geraniales*

Suku : *Rutaceae*

Marga : *Citrus*

Type : *Citrus nobilis Lour*

Species : *Citrus reticulata*

### Morphology of Batu 55 Variety Tangerine

a. Root

Citrus plants have taproots that penetrate the soil and are dark brown, like most plants. In loose, fertile soil, the taproot can grow up to 5 meters deep, while other fibrous branch roots can grow up to 2-3 meters. (Yulian Pratiwi, 2021)



Gambar 2.1. Tangerine roots

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b. Stem

Citrus plants have round stems with brownish-black bark on older stems and dark green on younger stems, with a rough surface. Citrus stems are woody and sturdy. They grow vertically with a slight curve at the top. The stems are cylindrical in shape. (Yulian Pratiwi, 2021)



Gambar 2.2. Tangerine stem

c. Leaves

Citrus plants have oval-shaped leaves that are slightly elongated (oblongus). There are variations in leaf shape, with a blunt base and a pointed tip (acutus), and serrated edges (crenatus). The leaves are thin but strong, leathery, with a smooth, slippery, and shiny upper surface. The underside is whitish-green with a rough, slightly wavy texture. The leaves of citrus plants are located at the end of the stem and alternate on the branches. (Yulian Pratiwi, 2021)



Gambar 2.3. Tangerine leaves

d. Flower

The flowers on the tangerine plant are yellowish white and emit a distinctive fragrance. The flowers of the tangerine plant are complete flowers with a radially symmetrical actinomorphic shape that has a multiple of 5 petals (pentamerus) where the arrangement is in a circle (cyclic) and the base of the flower is shaped like a disc (discus) where the pistil has the highest position among the other flower parts. The flowers of the tangerine plant are included in the type of compound inflorescence (inflorencetia), which grows in the leaf axils, precisely located at the tips of the stems and branches. (Yulian Pratiwi, 2021)

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Gambar 2.4. Tangerine flower

e. Fruit

Young tangerines have a dark green color, while ripe fruits will be yellowish green with a slightly rough texture on the surface of the skin and various fruit shapes, some are round, oval and slightly elongated oblong and the skin of the fruit is easy to peel. The fruit on the citrus plant is included in the single true fruit, namely the fruit that is formed from one flower with only one ovary and has a thick and fleshy fruit wall. (Yulian Pratiwi, 2021)



Gambar 2.5. Tangerine fruit

f. Seed

Tangerine seeds are found in the flesh of the fruit, with the number of seeds ranging from 1-3 in each section. Tangerine seeds are oval, with a pointed tip and a blunt base. They have two parts: the epidermis, a yellowish-white skin, and the dermis, a light green inner seed, which will later grow into a new plant. (Yulian Pratiwi, 2021)



Gambar 2.6. Tangerine seeds

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Several previous studies have demonstrated that the application of compost and other organic fertilizers significantly affects the quality of mandarin fruits (*Citrus reticulata* Blanco). El-Shazly et al. (2023) reported that partial substitution of inorganic fertilizers with organic sources and biofertilizers in *Murcott* mandarin trees improved fruit weight, juice volume, and vitamin C content, while reducing total fruit acidity. These findings indicate that organic fertilization plays an important role in enhancing the physical and chemical quality of mandarin fruits. Furthermore, a study conducted by Horticulture Research Station et al. (2024) revealed that the application of compost fertilizer combined with NPK significantly increased fruit weight, yield per tree, and total sugar content of *Murcott tangerine* compared to the use of inorganic fertilizers alone. In addition, Yadav et al. (2024) found that different organic nutrient sources, including compost and vermicompost, had a significant effect on chemical quality parameters of mandarin fruits, particularly the total soluble solids to acidity ratio (TSS/acid) and nutrient composition. These studies collectively suggest that compost fertilizer has strong potential to improve mandarin fruit quality and provide a scientific basis for further research on the Batu 55 tangerine variety.

## Research Method

This study uses a comparative research concept by conducting observations related to the quality of the Batu 55 variety of tangerine yield in the area (block A1) of PT. Kusuma Agrowisata. The results of the observation of the quality of the orange yield will be used as a comparison material with the description of the quality of the Batu 55 variety of tangerine yield according to the Decree of the Minister of Agriculture Number 307/Kpts/SR.120/4/2006 Concerning the Determination of Batu 55 Tangerine as a New Superior Variety, (2006) describes that Batu 55 Tangerine fruit has a sweet, slightly sour and fresh taste with a sweetness level of 11% brix, the color of ripe fruit skin is greenish yellow, the weight per fruit is ± 110.62 g, and the fruit diameter is ± 5.9 cm.

The sampling method used in this study, based on Tasri (2007), is a systematic sampling method. If the plant population is more than 100, 15% of the sampled plants are taken, while if the population is less than 100, 50% of the sampled plants are taken. According to Firmansyah & Dede (2022), the following formula can be used to determine the size of the systematic sampling interval:

$$K = \frac{N}{n}$$

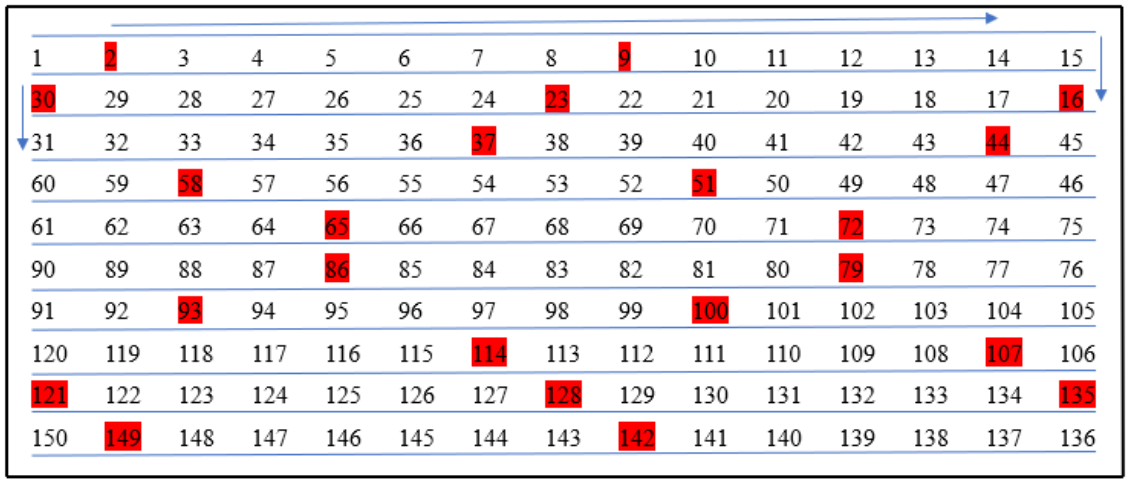
Description: K = Sampling interval

N = Total population

n = Number of samples taken

In this study, the population of Batu 55 tangerine plants in Block A2 was 150 (>100). Therefore, 15% of the 150 plants were sampled, resulting in 22.5 samples, rounded up to 23 citrus plants. The sequential number and repetition of sample plants were determined using the formula: K = 150/23 = 6.5 (rounded up to 7). Nine lottery cards were then prepared, numbered 1 through 9, and randomly selected. If the number drawn was 2, sampling began from the second tree. The second sample was counted from the second tree and added 7 (the K value), resulting in the second sample on the ninth tree, and so on, for a total of 23 samples. Each sample was labeled with a number on the stem to prevent mix-ups during observation. The layout for taking sample tree points is below.

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Penentuan titik pohon sampel tanaman jeruk pada area blok A2

Description:

Numbers 1 – 150 are: The number of citrus plant populations.

Numbers 2, 9, 16, etc. are: The number of sample plants observed.

## Results and Discussion

### Results

Based on direct field observations regarding the effect of organic fertilizer on orange yield quality, the data showed an average fruit yield of 243 per tree, a fruit diameter of 7.09 cm, a fruit weight of 157.29 g, and a sweetness content of 10.61 brix. The results of the data were compared with the previous description based on the Decree of the Minister of Agriculture Number 307/Kpts/SR.120/4/2006 Concerning the Determination of Batu 55 Tangerine as a New Superior Variety, (2006) described that Batu 55 Tangerine fruit has a sweet, slightly sour and fresh taste with a sweetness level of 11% brix, the color of ripe fruit skin is greenish yellow, weight per fruit is ± 110.62 g, and fruit diameter is ± 5.9 cm. So this study shows that the average application of organic fertilizer with a dose of 30 kg/tree can increase the number of fruits per tree, fruit diameter per fruit and fruit weight per fruit but cannot increase the level of sweetness of the fruit. The results of the research data can be seen in the table below:

**Table 5.1. Average yield data for the number of fruits per tree, fruit diameter per fruit, fruit weight per fruit, and fruit flavor content per fruit.**

| Sample Plants | Number of Fruits/Tree (fruit) | Fruit Diameter (cm) | Fruit Weight (g) | Flavor/Fruit Content (Brix) |
|---|---|---|---|---|
| S1 | 206 | 6,82 cm | 136 g | 11 Brix |
| | | 7,74 cm | 200 g | 11 Brix |
| | | 7,35 cm | 178 g | 10 Brix |
| S2 | 199 | 7,12 cm | 180 g | 10 Brix |
| | | 7,26 cm | 168 g | 11 Brix |
| | | 7,48 cm | 169 g | 10 Brix |
| S3 | 170 | 7,46 cm | 175 g | 10 Brix |

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| Sample Plants | Number of Fruits/Tree (fruit) | Fruit Diameter (cm) | Fruit Weight (g) | Flavor/Fruit Content (Brix) |
|---|---|---|---|---|
| | | 7,45 cm | 200 g | 10 Brix |
| | | 6,82 cm | 141 g | 12 Brix |
| S4 | 314 | 6,74 cm | 127 g | 12 Brix |
| | | 6,7 cm | 130 g | 12 Brix |
| | | 6,55 cm | 141 g | 11 Brix |
| S5 | 184 | 7,52 cm | 194 g | 11 Brix |
| | | 6,38 cm | 127 g | 12 Brix |
| | | 7,15 cm | 158 g | 12 Brix |
| S6 | 278 | 7,62 cm | 206 g | 11 Brix |
| | | 6,74 cm | 130 g | 12 Brix |
| | | 7,26 cm | 156 g | 12 Brix |
| S7 | 117 | 7,26 cm | 163 g | 12 Brix |
| | | 7,35 cm | 175 g | 11 Brix |
| | | 7,9 cm | 186 g | 11 Brix |
| S8 | 207 | 7,25 cm | 158 g | 12 Brix |
| | | 6,6 cm | 147 g | 11 Brix |
| | | 7,36 cm | 163 g | 12 Brix |
| S9 | 128 | 7,34 cm | 177 g | 10 Brix |
| | | 7,73 cm | 190 g | 9 Brix |
| | | 7,15 cm | 144 g | 10 Brix |
| S10 | 154 | 7,23 cm | 175 g | 10 Brix |
| | | 7,33 cm | 158 g | 10 Brix |
| | | 7,3 cm | 177 g | 11 Brix |
| S11 | 216 | 7,64 cm | 154 g | 11 Brix |
| | | 7,2 cm | 179 g | 9 Brix |
| | | 6,54 cm | 134 g | 9 Brix |
| S 12 | 210 | 7,26 cm | 155 g | 9 Brix |
| | | 7,3 cm | 173 g | 10 Brix |
| | | 7,23 cm | 175 g | 10 Brix |
| S 13 | 288 | 6,84 cm | 144 g | 10 Brix |
| | | 6,85 cm | 155 g | 11 Brix |
| | | 7,3 cm | 155 g | 11 Brix |
| S 14 | 281 | 6,74 cm | 153 g | 11 Brix |
| | | 7,36 cm | 180 g | 11 Brix |
| | | 7,1 cm | 159 g | 11 Brix |
| S 15 | 264 | 7,13 cm | 157 g | 11 Brix |
| | | 7,1 cm | 161 g | 11 Brix |
| | | 7,2 cm | 156 g | 10 Brix |
| S 16 | 286 | 6,93 cm | 162 g | 10 Brix |
| | | 6,93 cm | 154 g | 10 Brix |
| | | 7,27 cm | 157 g | 11 Brix |
| S 17 | 381 | 7,16 cm | 161 g | 10 Brix |
| | | 6,45 cm | 141 g | 9 Brix |
| | | 6,48 cm | 130 g | 10 Brix |
| S 18 | 369 | 6,65 cm | 131 g | 10 Brix |

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| Sample Plants | Number of Fruits/Tree (fruit) | Fruit Diameter (cm) | Fruit Weight (g) | Flavor/Fruit Content (Brix) |
|---|---|---|---|---|
| | | 6,63 cm | 130 g | 10 Brix |
| | | 7,5 cm | 157 g | 11 Brix |
| S 19 | 222 | 7,35 cm | 170 g | 10 Brix |
| | | 7,15 cm | 158 g | 10 Brix |
| | | 7,6 cm | 154 g | 11 Brix |
| S 20 | 158 | 7,75 cm | 200 g | 10 Brix |
| | | 7,12 cm | 148 g | 11 Brix |
| | | 7,23 cm | 165 g | 11 Brix |
| S 21 | 252 | 7,55 cm | 195 g | 11 Brix |
| | | 6,86 cm | 140 g | 10 Brix |
| | | 6,92 cm | 130 g | 10 Brix |
| S 22 | 305 | 6,83 cm | 144 g | 11 Brix |
| | | 6,84 cm | 135 g | 11 Brix |
| | | 6,83 cm | 145 g | 10 Brix |
| S 23 | 399 | 6,16 cm | 109 g | 11 Brix |
| | | 6,2 cm | 109 g | 10 Brix |
| | | 6,22 cm | 109 g | 10 Brix |
| Rata-rata | 243 Buah | 7,09 cm | 157,29 g | 10,61 Brix |

## Discussion

Previous descriptions of the quality of Batu 55 tangerine fruit, referring to the Decree of the Minister of Agriculture Number 307/Kpts/SR.120/4/2006 concerning the Determination of Batu 55 Tangerine as a New Superior Variety, (2006) described Batu 55 tangerine fruit as having a sweet, slightly sour, and refreshing taste with a sweetness level of 11% Brix, a greenish-yellow ripe fruit skin color, a fruit weight of ± 110.62 g, and a fruit diameter of ± 5.9 cm. However, based on the average results in Table 5.1, there are differences with this description. This study found that Batu 55 tangerines had an average number of fruits per tree of 243, a fruit diameter of 7.09 cm, a fruit weight of 157.29 g, and a fruit sweetness content of 10.61% Brix. This indicates that applying organic fertilizer (compost) at a dose of 30 kg per tree can increase the number of fruits per tree, fruit diameter per fruit, and fruit weight per fruit, but it does not increase the sweetness level of the fruit.

Compost application is an agronomic technique applied to improve the quality of agricultural products. Plants require nutrients during both the vegetative and generative phases. The generative phase is the productive stage in plants, characterized by the emergence and development of flower buds, fruit, and seeds. During this phase, several important processes occur, including cell fertilization, tissue maturation, fiber thickening, and the formation of hormones that play a role in the flowering process (Kotten et al., 2023). Organic fertilizer plays a significant role in supporting this phase because it can influence the timing of flower emergence, the percentage of pistils that develop into fruit, the time of first harvest, the number of fruits per plant, the total weight of fruits per plant, and the weight of fruits per fruit (Rozi, 2020). Furthermore, organic fertilizers contain complete macro and micro nutrients, such as N, P, K, C, Ca, Mn, Zn, B, Cu, Fe, and Mo, thus increasing plant productivity (Kustanto et al., 2025).

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The results of this study align with Amnani's (2023) study, which found that organic fertilizer treatment of tangerine plants significantly increased fruit weight, diameter, and sweetness compared to controls without organic fertilizer. This supports the findings of horticultural experiments related to improving citrus fruit quality and yield. Piyohu et al. (2022) showed that applying organic waste compost can affect watermelon growth and production, specifically in terms of flower number, flower development percentage, fruit number, fruit diameter, flesh diameter, and fruit weight. Nuranjani et al. (2025) also stated that applying organic fertilizer at the correct dosage can also significantly affect the number of fruits per plant. Furthermore, fruit plants fertilized with organic fertilizers generally exhibit better growth and development, ultimately increasing plant productivity and improving the quality of the fruit (Saputra, 2025).

However, the average results in Table 5.1 also indicate that the application of organic compost fertilizer had no significant effect on fruit sweetness. This aligns with research by Banu & Sholihah (2025), which showed that trichocompost application significantly affected fruit weight and diameter but had no significant effect on fruit sweetness or sugar content. One external factor that can prevent fruit from becoming less sweet is frequent rainfall (Suratmi, 2022). Heavy rainfall can reduce fruit sweetness by increasing water content, which dilutes sugar concentration and lowers Brix levels, a measure of dissolved solids, including sugar. Studies on sweet cherries have shown that rain cover, which reduces exposure to rainfall, leads to higher sugar content compared to uncovered trees, suggesting that rainfall negatively impacts sugar accumulation in the fruit (Pino et al., 2023). This is supported by research by Kalsum et al. (2022) which shows that pomelo fruit harvested in the dry season has better internal fruit quality than fruit harvested in the rainy season, which is indicated by the total soluble solids (Brix) content of pomelo fruit.

The level of fruit ripeness is one of the main factors determining the increase in Brix value because in this phase the starch stored in the fruit tissue is converted into simple sugars such as glucose and fructose so that the taste becomes sweeter and the concentration of dissolved solids gradually increases. Fruit picked prematurely generally has a low Brix value so it is less sweet and less attractive, while harvesting at the right ripeness produces a high Brix value with a balance of sweetness, sourness, aroma, and texture and freshness that remains good. In addition, soil fertility and nutrient availability also greatly influence the process of photosynthesis and sugar formation in fruit; potassium helps the translocation of photosynthesis products from leaves to fruit, while phosphorus is important in the formation of ATP energy for metabolic activities. Nutrient-rich soil allows plants to grow optimally and produce fruit with high sugar content, while potassium and phosphorus deficiencies reduce sugar formation so that the Brix value and sweetness are reduced, so that fertilizer with the appropriate type and dose is very important in determining the final quality of the fruit. Environmental factors such as temperature, sunlight intensity, and soil pH also affect plant metabolism, enzyme activity, photosynthesis rate, and nutrient absorption; The right temperature accelerates the breakdown of starch into sugar, sunlight provides energy for photosynthesis, and the right pH supports nutrient availability. Unsuitable environmental conditions, such as temperatures that are too low or too high, can inhibit fruit ripening or cause plant stress, resulting in decreased fruit quality. All of these factors work together to determine sugar accumulation and Brix values in fruit (Aulia, 2025).

## Conclusion

Based on the results of research that has been done, the provision of compost fertilizer with a dose of 30kg/plant can improve the quality of the results of the tangerine fruit variety Batu 55 including the number of fruits per tree, fruit diameter and fruit weight per fruit. This is shown by the average number of fruits/plant of 243 fruits, the average fruit diameter of 7.09 cm and the average fruit weight/fruit of 157.29 g. However, this treatment did not have a significant effect on the level of sweetness of the fruit,

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this is shown by the average result only reaching 10.61% brix. So the taste quality parameters (sweetness level) are not affected by compost fertilizer and the dose used.

**Recommendations**

a. For further research, it is recommended to combine organic fertilizer with inorganic fertilizer to determine the effect on fruit sweetness.

b. Testing with different doses of compost fertilizer is necessary to determine the optimum dose that not only increases yield but also the quality of fruit flavor.

c. For farmers, the use of compost fertilizer at a dose of 30 kg/tree can be recommended to increase citrus fruit yield, but to increase sweetness, additional treatments beyond just organic fertilizer are required.

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