# Sari_2022_IOP_Conf._Ser.__Earth_Environ._Sci._1104_012019

*by* Prodi Agroteknologi

**Submission date:** 25-May-2023 10:33AM (UTC+0700)
**Submission ID:** 2101323144
**File name:** Sari_2022_IOP_Conf._Ser.__Earth_Environ._Sci._1104_012019.pdf (646.68K)
**Word count:** 4714
**Character count:** 22723

# Effect of Boron Fertilizer and of Potassium Fertilizer on Growth and Production of Purple Eggplant (*Solanum Melongena* L.)

To cite this article: Fanny Martha Sari *et al* 2022 *IOP Conf. Ser.: Earth Environ. Sci.* **1104** 012019





# Effect of Boron Fertilizer and of Potassium Fertilizer on Growth and Production of Purple Eggplant (*Solanum Melongena* L.)

**Fanny Martha Sari[1], M. Abror[2], Saiful Arifin**

Universitas Muhammadiyah Sidoarjo, Sidoarjo, Indonesia

Email: [1]marthafannysari@gmail.com, [2]abror@umsida.ac.id

**Abstract.** This study aims to determine the response of boron and potassium fertilizers on the growth and production of purple eggplant (Solanum melongena L.). The research was conducted in the village of Jiken, Kec. Tulang, Sidoarjo Regency and continued in the microbiology and biotechnology laboratory of the Muhammadiyah University of Sidoarjo. Starting from February to May 2020. The experiment was arranged factorially using a randomized block design followed by the 5% BNJ test consisting of 2 factors. The first factor is boron fertilizer with levels of 0 kg/ha, 6 kg/ha and 12 kg/ha. The second factor was potassium fertilizer which consisted of 3 treatment doses, namely 50 kg/ha, 100 kg/ha and 150 kg/ha. The variables observed were plant height, leaf area, number of leaves, number of fruits, fruit weight, fruit length, fruit sweetness,antioxidant levels. The results showed that there was no significant interaction in each treatment, this is because boron fertilizer decreased at the last observation in the study. While the antioxidan test in this study used free radical damping method with DPPH with wavelength of 517 nm using spectrophotometer.

**Keywords:** Boron Fertilizer, Potassium Fertilizer, Purple Eggplant

## 1. Introduction

The anung plant*(Solanum melongena* L.) is a vegetable and fruit commodity that has many varieties with various distinctive shapes and colors. Eggplant is one of the vegetables with a high nutritional content, such as protein, fat, carbohydrates, vitamin A, vitamin B, vitamin C, Pospor and iron. Cultivation of eggplant vegetables has not been done in accordance with the public demand for increasing commodities even export opportunities are still open eggplant is a vegetable that is widely know by the people of Indonesia. Anung plant is a seasonal plant that is a little ar3-4 months old. [18]. One of the factors that affect the production and quality of eggplant is the fertilization process. Fertilizer is a nutrient that is added to soil and plants in the form of both organic and inorganic fertilizers with the aim of meeting or supplementing the state of nutrients in the soil that are not sufficiently available to meet the needsof han plants [16]. Maintaining and improving soil fertility by delivering elements or nutrients into the soil can contribute foodstuffs to plants. Fertilization will also improve the pH of the soil and improve the soil environment as a place for plants to grow (Sarief, 1986). In addition to basic NPK fertilizers, there are also boron fertilizers that serve as supporting crop production. Boron is one of the elements that can increase productivity results in plants. Boron also plays a role in bringing carbohydrates to the whole of plant tissues, accelerating the absorption of potassium elements, stimulating flowering plants, helping pollination processes, and improving the quality of vegetable and fruit production. Meanwhile, potassium is a nutrient that is very important for

the formation of starch and translocation of sugar, important also for the development of chlorophyll. Potassium alsodoes not improve the rooting system [8].

The fertilization process also affects the antioxidant content and sugar levels in plants. Antioxidants are compounds that can inhibit oxidation reactions, by binding to free radicals and highly reactive molecules (Winarsi, 2007) as well as additives or appendages that are useful for protecting unsaturated food components. The magnitude of antioxidant activity in fruits and vegetables is measured based on $IC_{value\ 50}$ (Sari, 2016). Antioxidants in food play an important role in maintaining product quality, preventing persistence, changes in nutritional value, changes in color and aroma, and other physical damage caused by oxidation reactions (Widjaya, 2003). While the level of brix (sugar content) in the fruit is influenced by the nutrient content in the planting media. Sugar levels in fruit always increase due to the occurrence of carbohydrate degradation and decrease on certain days because sugar used for the process of respiration will be changed in other compounds (Siswanto, 2010).

## 2. Methodology

### 2.1. Place and Time

The study was conducted for 3 months from February 2020 to April 2020. The research will be conducted in Jiken Village of Tulangan District of Sidoarjo Regency using polybag planting media and further observations are carried out in the Agrotechnology laboratory of muhammadiyah university of Sidoarjo.

### 2.2. Tools and Materials

The ingredients used in the study are antaboga variety eggplant seeds, basic fertilizer using chicken manure, boron borate fertilizer 48 wasp cap, potassium fertilizer from KCL pearl cap, water, ethanol akuades soil. Tools used polybag, cethok, bucket, gembor, wood, ruler, scissors, digital scales, meter, camera, bulpoint, label paper, measuring glass, pipette, pumpkin erlenmeyer, spectrophotometer and refractometer.

### 2.3. Research Design

The study design was conducted using randomized group design (RAK) in a factorial stacking, consisting of 2 treatment factors and each treatment was re-arranged 3 times. The treatment used in this study is control (without the use of boron fertilizer), B1 (boron fertilizer as much as 6 kg / ha), and B2 (boron fertilizer as much as 12 kg / ha). K1 treatment using doses (potassium fertilizer as much as 50 kg / ha), K2 (potassium fertilizer as much as 100 kg / ha), and K3 (potassium fertilizer as much as 150 kg / ha. There are nine types of treatment. This experiment has 3 repeats so that in total there are 27 units of experiments.

### 2.4. Implementation of Research

#### 2.4.1. Planting media setup

Prepare the planting medium in a polybag consisting of soil and manure with a ratio of 1: 1 using selected soil (jiken) that has been clean from weeds. Then the seedlings of eggplant plants are planted on a polybag measuring 35cm x35cm which contains soil and manure in evenly stirred and labeled according to the treatment.

#### 2.4.2. Watering

Watering is given every day in the morning and evening so that the plant remains fulfilled with water needs and the media is maintained from moisture.

#### 2.4.3. Fertilization

Fertilization treatment is carried out after 7 DAP as a basic fertilizer. Administration of potassium and boron fertilizer in accordance with the dose of treatment. The provision of fertilizer is done by spreading evenly over the planting media and then watered.

#### 2.4.4. Ajir Installation

Installation of ajir by plugging in the planting media in polybags. Installation of ajir with the aim that the growth is strong and can support the title of the plant. The salting with bamboo is 90 cm high, 2-4 cm wide, the distance from the main stem of 5-7 cm is carried out two weeks after planting.

#### 2.4.5. Weeding

Weeding is done regularly or once a week by removing weeds or weeds that co-grow around polybags. The presence of these weeds can inhibit growth.

#### 2.4.6. Harvesting

Harvesting is done after the plant is 80-90 days old after planting, and is done up to 5 times harvesting. The fruit is harvested in the morning and evening to avoid the sun's heat which can shrink the fruit and lower the quality of the results.

### 2.5. Observation Parameters

#### 2.5.1. Observation

The observed growth is a) Plant height (cm) Observation of plant height is done once a week from the age of 14 DAP to a week before harvest. The height of the plant is measured by using: ruler ranging from the neck of the roots to the point of growth; b) Leaf area (cm) Observation of leaf area using: Application of Petiole with calibration paper to measure leaf area; c) Number of leaves Observation of the number of leaves is carried out from the age of 14 DAP to a week before harvest at intervals of one week. Observation is done by calculating the number of leaves that appear on the plant; d) The number of fruits by counting and recording the number of fruits harvested up to the 3rd harvest. The harvested fruit is a fruit with criteria of purrish-black color; e) The weight of the fruit (gr) the weight of the fruit is calculated each time the harvest. By calculating the amount of fruit weight of each harvest. Heavy observations are made by using: Digital scales; f) The length of the fruit (cm) the length of the fruit is measured using a ruler / meter for each fruit harvested. from the end of the fruit to the base of the fruit; g) Sugar content is measured using a tool: Refractometer for each fruit that has been harvested how to insert eggplant juice into the refractometer tool then see the level of basil how much; Antisionin (Antioxidant) Levels of antisionin are measured using a tool: Spectrophotometry in each fruit that has been harvested.

#### 2.5.2. Data Analysis

The results obtained data are analyzed using variety analysis, and if the results of the variety analysis are different real and very real followed by BNJ 5% test data to find out the difference in each treatment.

## 3. Results and Discussions

From the results of the variety analysis showed that boron fertilizer and potassium fertilizer there was no noticeable interaction with the height of eggplant plants in all observation ages ranging from 14-56 DAP. The average yield of plant height is presented in table 1.

**Table 1.** average plant height (cm) on the interaction of Boron Fertilizer and Potassium Fertilizer at various ages observation of the growth and production of purple eggplant plants (Solanum melongena L.).

| Treatment | Plant Height Per DAP (CM) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 14DAP | 21DAP | 28DAP | 35DAP | 42DAP | 49DAP | 56DAP |
| B0K1 | 37.54 | 38.83 | 42.04 | 51.27 | 58.95 | 63.24 | 64.54 |
| B0K2 | 35.02 | 36.26 | 40.04 | 49.82 | 60.30 | 62.85 | 65.06 |
| B0K3 | 35.61 | 36.44 | 39.71 | 54.52 | 62.80 | 68.48 | 70.74 |
| B1K1 | 38.34 | 39.44 | 41.36 | 53.20 | 60.42 | 64.11 | 65.24 |
| B1K2 | 36.87 | 37.73 | 39.90 | 52.44 | 56.52 | 60.00 | 62.86 |
| B1K3 | 36.00 | 35.73 | 39.21 | 52.14 | 55.95 | 60.50 | 62.89 |
| B2K1 | 38.15 | 39.22 | 43.36 | 60.33 | 70.72 | 71.74 | 73.04 |
| B2K2 | 35.4 | 36.05 | 39.81 | 50.89 | 55.27 | 58.37 | 63.64 |
| B2K3 | 36.69 | 37.76 | 42.40 | 50.21 | 52.75 | 57.65 | 61.06 |
| BNJ 5% | tn | tn | tn | tn | tn | tn | tn |

Description: tn (tidak nyata) : different is not real

From the results of anova tests such as those in the table above showed that there was no response to the treatment of boron fertilizer and potassium fertilizer. It can be known from the table that on the first observation the average yield of the best average of the first observations (14-56 DAP). However, it is seen that the highest eggplant plant height at 56 dap occurs in the combination of boron fertilizer treatment of 12 kg / ha and potassium fertilizer 50 kg / ha that is (B2K1) which is (73.04 cm).

### 3.1. Number of Leaves

Based on the results of the variety analysis showed there was no interaction between the treatment of Boron Fertilizer and Potassium Fertilizer. In addition Boron B1, B2 had no noticeable effect on all observational ages, resulting in the average number of leaves presented in table 2.

**Table 2.** Average Number of Leaves Response of Boron Fertilizer and Potassium Fertilizer to Purple Eggplant Plant Growth at 14-49 DAP

| Treatment | Leaf Per HST | | | | | |
|---|---|---|---|---|---|---|
| | 14DAP | 21 DAP | 28 DAP | 35 DAP | 42 DAP | 49 DAP |
| B0K1 | 4.67 | 10.67 | 13.00 | 12.00 | 25.67 | 27.00 |
| B0K2 | 5.00 | 14.33 | 10.33 | 15.33 | 17.33 | 24.00 |
| B0K3 | 5.33 | 12.67 | 7.67 | 17.33 | 15.33 | 26.00 |
| B1K1 | 4.67 | 11.00 | 8.67 | 12.33 | 20.67 | 25.00 |
| B1K2 | 6.67 | 13.00 | 8.67 | 16.33 | 15.67 | 24.67 |
| B1K3 | 5.67 | 11.33 | 12.33 | 15.67 | 17.33 | 24.00 |
| B2K1 | 5.67 | 13.00 | 13.00 | 21.00 | 19.33 | 31.33 |
| B2K2 | 6.33 | 12.00 | 12.00 | 16.67 | 21.00 | 22.00 |
| B2K3 | 5.00 | 12.33 | 13.00 | 15.33 | 18.33 | 28.33 |
| BNJ 5% | tn | tn | tn | tn | tn | tn |

Description: Different unreal (tn) Average Effect of Boron Fertilizer and Potassium Fertilizer on the Number of Purple Eggplant Plant Leaves at 14-49 DAP.

From the results of anova tests such as those in the table above showed that there was no response to the treatment of boron fertilizer and potassium fertilizer. It can be known from the table that on the first observation the average yield of the best average of the first observations (14-49 DAP). However, it is seen that the highest number of eggplant plant leaves in the 49 dap occurs in the combination of boron fertilizer treatment of 12 kg / ha and potassium fertilizer 50 kg / ha that is (B2K1) which is (31.33 cm).

### 3.2. Leaf Area

Based on the data of the results of the variety analysis showed no interaction in the combination of the treatment of Boron Fertilizer and Potassium Fertilizer on the growth and production of purple eggplant. After the BNJ test 5% then the full data is presented in table 3 below:

**Table 3.** Average Leaf Area ($cm^2$) Response of Boron Fertilizer and Potassium Fertilizer to Purple Eggplant Plant Growth

| Treatment | Leaf Area ($cm^2$) | | |
|---|---|---|---|
| | 35 DAP | 42 DAP | 49 DAP |
| B0K1 | 10.93 | 41.33 | 43.77 |
| B0K2 | 11.73 | 38.37 | 46.10 |
| B0K3 | 13.67 | 42.33 | 39.13 |
| B1K1 | 9.97 | 41.70 | 43.43 |
| B1K2 | 13.90 | 35.27 | 36.43 |
| B1K3 | 14.97 | 37.27 | 51.93 |
| B2K1 | 13.77 | 44.07 | 56.53 |
| B2K2 | 14.20 | 38.83 | 34.47 |
| B2K3 | 12.67 | 35.70 | 36.57 |
| BNJ 5% | tn | tn | tn |

Description: different is not real (tn).

From the results of anova tests such as those in the table above showed that there was no response to the treatment of boron fertilizer and potassium fertilizer. It can be known from the table that on the first observation the average yield of the best average of the first observations (35-49 DAP). However, it is seen that the highest number of eggplant plant leaves in the 49 dap occurs in the combination of boron fertilizer treatment of 12 kg / ha and potassium fertilizer 50 kg / ha that is (B1K3) which is (56.53 cm).

### 3.3. Total Number of Fruits

The results of the variety analysis on variable fruit numbers showed that the treatment of Boron Fertilizer and Potassium Fertilizer did not occur interaction. In addition, the treatment of Boron Fertilizer and Potassium Fertilizer has no real understanding of all observation ages. After the BNJ test 5% is obtained results in table 4.

**Table 4.** Average Effect of Boron Fertilizer and Potassium Fertilizer On The Amount of Fruit per Harvest of Purple Eggplant Plants

| Treatment | Number of Fruits Per DAP | | |
|---|---|---|---|
| | I | Ii | Iii |
| B0K1 | 5 | 4 | 5 |
| B0K2 | 5 | 4 | 5 |
| B0K3 | 5 | 4 | 3 |
| B1K1 | 4 | 5 | 5 |
| B1K2 | 6 | 4 | 4 |
| B1K3 | 5 | 3 | 4 |
| B2K1 | 4 | 5 | 3 |
| B2K2 | 3 | 5 | 6 |
| B2K3 | 4 | 4 | 5 |
| BNJ 5% | tn | tn | tn |

Description: tn: different is not real (tn)

From the results of anova tests such as those in the table above showed that there was no response to the treatment of boron fertilizer and potassium fertilizer. It can be known from the table that on the

first observation on the average yield of the best average of the first observations (35 DAP). However, it is seen that the highest number of eggplant plant leaves in 35 dap occurs in the combination of boron fertilizer treatment of 12 kg / ha and potassium fertilizer 50 kg / ha that is (B2K2) that is (6).

### 3.4. Weight of Fruit

Based on the results of the diversity fingerprint analysis in BNJ 5% showed no interaction between the treatment of Boron Fertilizer and Potassium Fertilizer. In addition, Boron Fertilizer and Potassium Fertilizer had no noticeable effect on the variable number of leaves in the Purple Eggplant plant at all ages of observation.

**Table 5.** Average Effect of Boron Fertilizer and Potassium Fertilizer on The Total Weight of Purple Eggplant Plant Fruit per Harvest

| Treatment | Weight of Fruit Per DAP | | |
|---|---|---|---|
| | I | Ii | Iii |
| B0K1 | 667.81 | 620.95 | 654.22 |
| B0K2 | 623.02 | 521.81 | 612.77 |
| B0K3 | 669.33 | 746.37 | 481.10 |
| B1K1 | 454.06 | 520.75 | 686.59 |
| B1K2 | 576.11 | 546.14 | 721.58 |
| B1K3 | 812.77 | 673.56 | 653.86 |
| B2K1 | 503.06 | 520.45 | 473.61 |
| B2K2 | 238.85 | 651.79 | 807.35 |
| B2K3 | 497.88 | 617.34 | 617.74 |
| BNJ 5% | tn | tn | tn |

Description: tn: different is not real (tn)

From the results of anova tests such as those in the table above showed that there was no response to the treatment of boron fertilizer and potassium fertilizer. It can be known from the table that on the first observation the average yield of the best average of the first observations (35 DAP). However, it is seen that the highest number of eggplant plant leaves in the 35 dap diumur occurs in the combination of boron fertilizer treatment of 12 kg / ha and potassium fertilizer 50 kg / ha that is (B1K2) which is (712.58 cm).

### 3.5. Fruit Length

Based on the results of a variety analysis with BNJ 5% showed no interaction between the treatment of Boron Fertilizer and Potassium Fertilizer. In addition, Boron Fertilizer and Potassium Fertilizer had no noticeable effect on the variable length of the fruit in the Purple Eggplant plant at all observation ages. After the BNJ test 5% then the full data is presented in table 6 below.

**Table 6.** Average Effect of Boron Fertilizer and Potassium Fertilizer on the length of the fruit (cm) of Purple Eggplant Plant

| Treatment | Weight of Fruit Per DAP | | |
|---|---|---|---|
| | I | II | III |
| B0K1 | 18.00 | 27.79 | 23.59 |
| B0K2 | 17.00 | 17.00 | 17.63 |
| B0K3 | 22.55 | 24.37 | 26.57 |
| B1K1 | 25.18 | 24.67 | 23.55 |
| B1K2 | 24.76 | 27.83 | 22.46 |
| B1K3 | 21.33 | 20.16 | 19.43 |
| B2K1 | 18.50 | 18.00 | 19.50 |
| B2K2 | 20.00 | 22.00 | 24.50 |
| B2K3 | 22.99 | 21.65 | 35.99 |
| BNJ 5% | tn | tn | tn |

Description : different is not real (tn)

From the results of anova tests such as those in the table above showed that there was no response to the treatment of boron fertilizer and potassium fertilizer. It can be known from the table that on the first observation on the average yield of the best average of the first observations (35 DAP). However, it is seen that the highest number of eggplant plant leaves in the 35 dap occurs in the combination of boron fertilizer treatment of 12 kg / ha and potassium fertilizer 50 kg / ha that is (B2K3) which is (35.99 cm).

### 3.6. Sugar Content/Sweetness of Fruit

Based on the results of the analysis there is no interaction between the treatment of Boron Fertilizer and Potassium Fertilizer. In addition, Boron Fertilizer and Potassium Fertilizer do not have a real effect on the variable Sugar Content of Sweetness of Fruit in purple eggplant plants. After the BNJ5% test, the full data is presented in Table 7 below:

**Table 7.** Average Effect of Boron Fertilizer and Potassium Fertilizer on The Sweetness of Purple Eggplant Fruit

| Treatment | Sweetness Of Fruit | | |
|---|---|---|---|
| | I | II | III |
| B0K1 | 4.90 | 4.00 | 4.30 |
| B0K2 | 4.00 | 5.00 | 4.80 |
| B0K3 | 5.00 | 4.20 | 4.00 |
| B1K1 | 5.10 | 4.00 | 4.00 |
| B1K2 | 5.00 | 4.00 | 4.00 |
| B1K3 | 3.50 | 4.00 | 4.00 |
| B2K1 | 4.80 | 5.00 | 4.40 |
| B2K2 | 4.30 | 5.50 | 4.00 |
| B2K3 | 4.90 | 3.55 | 5.00 |
| BNJ 5% | TN | TN | TN |

Description: different is not real (tn)

From the results of anova tests such as those in the table above showed that there was no response to the treatment of boron fertilizer and potassium fertilizer. It can be known from the table that on the first observation on the average yield of the best average of the first observations (42 DAP). However, it is seen that the highest number of eggplant plant leaves in the 42 dap occurs in the combination of boron fertilizer treatment of 12 kg / ha and potassium fertilizer 50 kg / ha that is (B2K3) which is (5.00 cm).

### 3.7. Antioxidant Levels

**Table 8.** Average Effect of Boron Fertilizer and Potassium Fertilizer on Antioxidant Levels (ppm) of Purple Eggplant Plants

| Treatment | Deuteronomy | | |
|---|---|---|---|
| | U1 | U2 | U3 |
| B0K1 | 530.608 | 566.030 | 567.846 |
| B0K2 | 413.279 | 441.032 | 410.569 |
| B0K3 | 222.648 | 680.914 | 303.517 |
| B1K1 | 27662.86 | 532.475 | 314.746 |
| B1K2 | 478.305 | 575.632 | 298.699 |
| B1K3 | 210.513 | 676.802 | 307.565 |
| B2K1 | 172.391 | 346.603 | 124.087 |
| B2K2 | 366.966 | 388.661 | 307.087 |
| B2K3 | 345.154 | 521.267 | 320.298 |

Results from testing the above antioxidant levels that showed the best results in the lacable furnace without boron fertilizer and potassium fertilizer 100 kg / ha that is (146.11 ppm). The lower the value

of antioxidants, the better the antioxidant activity. Although, that on average below the value of 100 shows a better or neutral result while for a value above 100 indicates a weak result.

### 3.8. Discussion

The results of the diversity analysis did not show a significant interaction between the application of boron fertilizer and potassium fertilizer to the growth or production of purple eggplant plants in all observational variables. Overall, however, it had no real effect but responded to the increase in plant growth on each observation. Boron deficiency is caused by low soil content and over-feeding of lime. Rising pH values resulted in Boron becoming unavailable to plants. Excess boron can also cause poisoning for plants. Causes include excessive administration of borax fertilizer and the use of irrigation water with high Boron content [11]. Potassium is absorbed by plants from soil solutions depending on several factors: soil texture, Ph, and soil aeration. In addition, potassium also functions in forming and lifting carbohydrates. Potassium fertilization is the absorption of plant plants, plants absorb more soluble potassium than potassium needed and available quite a lot called excessive consumption, because this potassium does not increase plant production. To minimize fertilization should be given separately, so that the absorption of potassium at the end of growth and development can still be absorbed by plants.

## 4. Conclusion

From the results of the research obtained, it can be concluded thatthere is no significant interaction between the treatment of Boron Fertilizer and Potassium Fertilizer its effect on the growth and production of eggplant plants at all ages of observation variables. Boron fertilizer has no real effect on the growth and production of purple eggplant plants. Potassium fertilizer has no real effect on the growth and production of purple eggplant plants.

## References

[1] Afandi dan Nasih. 2002. Kesuburan Tanah. PT.Aksara.Jakarta
[2] Ai, N. S. (2012). Evolusi Fotosintesis pada Tumbuhan. *Jurnal Ilmiah Sains*,12(1).
[3] Alfon dan Aryantoro. 1993. Populasi dan Pemupukan N dan K Tanaman Jagung. Varietas TC 1 di Seram Maluku.Jurnal Agrikan Vol.8(1).
[4] Gardner FP, Pearce RB, and Mitchell RL. 1991. *Physiology of Crop Plants*. Diterjemahkan oleh H.Susilo. Jakarta. Universitas Indonesia Press.
[5] Gunawan Barus. 2018. Pengaruh Dosis Pupuk Kandang Ayam dan Pupuk KCL terhadap Pertumbuhan dan Produksi Tanaman Bawang Merah. Universitas HKBP Nommensen. Diakses 6 Oktober 2019.
[6] Hanhineva, K., Torronen ,R, Bondia - Pons, I., Kolehhmainen, J,P,M., Mykkanen, H., Poutanen, K. 2010. Impact of dietary polyphenols on carbohydrate metabolism. *Int.J. Mol. Sci.* 11: 1369-40.
[7] Hastuti, L. D. S. 2007. Terung Tinjauan Langsung ke Beberapa Pasar di Kota Bogor. Laporan Hasil Penelitian. Fakultas Matematika dan Ilmu Pengetahuan Alam. Universitas Sumatera Utara. Medan. 11 Hlm.
[8] Mattiello EM, Ruiz HA, Silva IR, Barros NF, Neves JCL, Behling M. 2009. Transporte de boron no solo e sua absorcao por eucalipto. Revista Brasileria de Ciencias do Solo. 33, 1281-1290.
[9] Novizan. 2005. Petunjuk Pemupukan yang Efektif. Agro Media Pustaka. Tangerang. 75 Hlm.
[10] Prakash, A., 2001. Antioxidant Activity, *Medallion Laboratories Analytical Progres*, vol. 19, No.2.
[11] Roemayanti, E. 2004. Pengaruh Konsentrasi Pupuk Pelengkap Dan Asam Giberelat (GA3) Terhadap Pertumbuhan dan Hasil Terung Jepang (*Solanum Melongena* L.) secara Hidroponik. Skripsi. Fakultas Pertanian Universitas Sebelas Maret .Surakarta.
[12] Singh, R., S. Chaurasia., A. D. Gupta., A. Mishra and P. Soni. 2014. Comparative Study of Transpiration Rate in *Mangifera indica* and *Psidium guajawa* Affect by *Lantana camara*

Aquaous Extract. *Journal of Environmental Science,Computer Science and Engineering & Technology*. 3(3) : 1228-1234.
[13] Siswandi. 2006. *Budidaya Tanaman Sayuran*. Citra Aji Pramana. Yogyakarta.
[14] Sitompul, S. M. dan Guritno, B. 1995. Analisis Pertumbuhan Tanaman. UGM Press:Yogyakarta.
[15] Sunarjono. 2008. *Bertanam 30 Jenis Sayuran* . Penebar Swadaya. Jakarta.
[16] Suriadikarta,2006. Pupuk Organik dan Pupuk Hayati. Rineka Cipta. Jakarta.
[17] Syukur, A. 2005. Penyerapan Boron Oleh Tanaman Jagung di Pantai Bugel Dalam Kaitannya Dengan Tingkat Frekuensi Penyiraman dan Pemberian Bahan Organik. *J. Ilmu Tanah dan Lingkungan.* 5(2).
[18] Ubaidillah, 2012 . Pengaruh Kompos Kulit Kakao Terhadap Pertumbuhan dan Hasil tanaman Terung. Universitas Muara Bungo. Diakses tanggal 12 juni 2014.
[19] Young, K.S. 1999. *Internet Addiction: Symptoms, Evaluation, and Treatment.* Innovations in Clinical Practive. Vol. 17. Sarasota, Florida: Profesional Resource Press.

# Sari_2022_IOP_Conf._Ser.__Earth_Environ._Sci._1104_012019

ORIGINALITY REPORT

| 20% | 16% | 16% | 8% |
|---|---|---|---|
| SIMILARITY INDEX | INTERNET SOURCES | PUBLICATIONS | STUDENT PAPERS |

PRIMARY SOURCES

| | | |
|---|---|---|
| 1 | oa.las.ac.cn<br>Internet Source | 3% |
| 2 | riset.unisma.ac.id<br>Internet Source | 2% |
| 3 | Submitted to Eastern Visayas State University<br>Student Paper | 2% |
| 4 | Asis, L E Pakpahan, F Ferayanti. "Growth and yield responses of three maize varieties toward fertilizing package at dry land in Aceh province", IOP Conference Series: Earth and Environmental Science, 2021<br>Publication | 1% |
| 5 | M. Abror, Emilda Agustina, S Arifin. "Analysis of Microorganisms and Organic Planting Media Against Growth and Results of Lettuce Plants", Journal of Physics: Conference Series, 2018<br>Publication | 1% |
| 6 | jim.unsyiah.ac.id<br>Internet Source | 1% |

| | | |
|---|---|---|
| 7 | backend.orbit.dtu.dk<br>Internet Source | 1 % |
| 8 | ijisrt.com<br>Internet Source | 1 % |
| 9 | N Herawati, B N Hidayah, M Ghulammahdi. "Influence of phosphorus and organic fertilizers on the growth and yield of Indonesian new superior variety of soybean in dry climate rice fields", IOP Conference Series: Earth and Environmental Science, 2020<br>Publication | 1 % |
| 10 | jurnal.una.ac.id<br>Internet Source | 1 % |
| 11 | neuroquantology.com<br>Internet Source | 1 % |
| 12 | S Rahayu, Y L Firdhauzy, H Prasetyo, D P S Setyohadi, D G Cahyaningrum. "Application of boron fertilizer and topping on female parent seed production of watermelon", IOP Conference Series: Earth and Environmental Science, 2023<br>Publication | 1 % |
| 13 | Nur Aisyah, Dahlan Dahlan, Abd. Azis H., Rachmat Rachmat. "PENGARUH PUPUK ORGANIK CAIR SIRIH DAN GAMAL (SIRGAM PLUS) TERHADAP PERTUMBUHAN DAN | 1 % |

PRODUKSI TANAMAN TERUNG UNGU (Solanum melongena L.)", Jurnal Agrisistem, 2021
Publication

| | | |
|---|---|---|
| 14 | Submitted to Universitas Tidar<br>Student Paper | 1 % |
| 15 | media.neliti.com<br>Internet Source | 1 % |
| 16 | pels.umsida.ac.id<br>Internet Source | 1 % |
| 17 | fikk.uny.ac.id<br>Internet Source | 1 % |

| | | | |
|---|---|---|---|
| Exclude quotes | On | Exclude matches | < 1% |
| Exclude bibliography | On | | |