DEMETER: Journal of Farming and Agriculture
Vol 3, Issue 3, November 2025, Page 297-303
ISSN: 2987-5889 (Media Online)
DOI: https://doi.org/10.58905/demeter.v3i3.699

The Effect of Potassium Fertilizer and Super-flora Foliar Fertilizer on the Growth of Chili Peppers (Capsicum frutescens L.)

Muhammad Haekal Zaqladi, M. Abror*

Department of Agrotechnology, Universitas Muhammadiyah Sidoarjo, Sidoarjo, Indonesia

*Corresponding Email: abror@umsida.ac.id

Abstract. This study aims to determine the effect of potassium fertilizer and Super-Flora foliar fertilizer on the growth of chili pepper plants (Capsicum frutescens L.). The study was conducted using a randomized block design (RBD) with two treatment factors, namely potassium fertilizer dosage (100 kg/ha, 150 kg/ha, and 200 kg/ha) and Super-Flora foliar fertilizer dosage (10 ml/l, 15 ml/l, and 20 ml/l). The parameters observed included plant height, number of leaves, and leaf area at various plant ages. The results showed that the application of 200 kg/ha of potassium fertilizer and 20 ml/l of Super-Flora foliar fertilizer produced the best growth with an increase in plant height, number of leaves, and leaf area compared to other doses. Although the 5% BNJ test results did not show significant differences in all parameters, the data trends indicated that the combination of high-dose potassium fertilizer and high-dose foliar fertilizer supported more optimal vegetative growth. In conclusion, the combination of potassium fertilizer and Super-Flora foliar fertilizer can be an effective fertilization strategy to enhance chili pepper growth, but the doses used must be adjusted to the plants' needs for greater efficiency.

Keywords: potassium fertilizer, foliar fertilizer, chili peppers

1 Introduction

Chili peppers (Capsicum annuum L.) are one of the most widely cultivated horticultural crops in Indonesia due to their important role in food and industrial needs. The high consumption of chili peppers, both as a daily food ingredient and as a raw material for the processing industry, makes chili peppers a strategic commodity in the national agricultural sector. However, challenges in chili cultivation, such as fluctuations in production influenced by cultivation techniques, soil fertility, and nutrient management, necessitate innovations in agronomic practices to improve crop productivity and quality. However, chili productivity is often influenced by agronomic factors, including soil conditions, fertilization, and the use of appropriate cultivation technologies[1] .

Fertilization is one of the key factors in efforts to improve chili plant growth and yield. Potassium (K) is an essential macro nutrient that plays an important role in photosynthesis, water balance regulation, and increasing plant resistance to biotic and abiotic stress. Potassium fertilizer has long been known to play a role in improving the quality and quantity of horticultural crops, including chili peppers[2] [3] .

Potassium fertilizer application has a significant effect on chili plant growth. In chili plants, potassium helps strengthen cell walls, thereby increasing the strength of stems and leaves. Plants that receive adequate potassium intake generally show better vegetative growth, such as sturdier stems and greener leaves, and are more resistant to pests and diseases[4] .

In addition to enhancing vegetative growth, potassium also plays an important role in influencing chili pepper yields. This element aids in fruit filling, increasing the size, weight, and quality of chili peppers, as well as extending their post-harvest shelf life. Optimal potassium application can significantly increase fruit production in terms of both quantity and quality[5] . On the other hand, potassium deficiency can cause growth disorders, yellowing leaves, and smaller, lower-quality fruits. Therefore, proper potassium fertilizer application is a key factor in improving chili plant yield and quality. The optimal potassium fertilizer dose for chili plants depends on soil conditions, chili variety, and cultivation techniques used. However, in general, the recommended potassium dosage ranges from 100-200 kg K2O per hectare, depending on the specific needs of the plant and the fertility level of the soil[6] . Determining the right dosage is very important because excessive potassium application can cause an imbalance of other nutrients in the soil, such as magnesium and calcium, which can actually inhibit plant growth. Conversely, too low a dose will not meet the plant's needs, resulting in suboptimal yields[7] .

DEMETER: Journal of Farming and Agriculture
Vol 3, Issue 3, November 2025, Page 297-303
ISSN: 2987-5889 (Media Online)
DOI: https://doi.org/10.58905/demeter.v3i3.699

This study was conducted by Nurwanto, Soedradjad and Sulistyaningsih, (2017) , which evaluated the effect of various potassium fertilizer doses on red chili (Capsicum annuum L.) yields. The results showed that potassium application significantly increased the number of fruits, fruit weight, and fruit quality, including color and resistance to damage during storage. The optimum dose found in this study was 150 kg K2O/ha. A study by Sari, Pertami, and Eliyatiningsih (2022) showed that potassium application can increase the resistance of chili plants to drought stress. Potassium helps improve water use efficiency in plants by improving the stomatal process and maintaining cell turgor. This study found that a dose of 175 kg K2O/ha can increase tolerance to water stress and maintain fruit yield even under drought conditions. A study conducted by Nurfira, Abdullah, and Ibrahim (2021) examined the interaction between potassium and nitrogen in chili plants. They found that the combination of potassium and nitrogen fertilizers at the right doses can increase the efficiency of both elements, thereby accelerating plant growth, increasing fruit size, and total production. The best potassium dose in combination with nitrogen is 120 kg K2O/ha, with higher chili production compared to the application of potassium or nitrogen alone.

In addition, the use of biofertilizers such as Super-flora is also being widely adopted by farmers to support plant growth. Super-flora is a biofertilizer containing beneficial microorganisms that can improve soil fertility by increasing nutrient availability and improving soil structure. The combination of inorganic fertilizers such as potassium and biofertilizers such as Super-flora is expected to provide optimal synergy in improving the growth and yield of chili plants[11] .

Research by Haq et al., (2014) discusses the effect of using foliar fertilizers containing micro nutrients, such as Zn, Cu, and Mn, on the growth and production of red chili peppers. The results of the study show that the application of foliar fertilizer significantly increases the number of leaves, plant height, and number of fruits per plant. Foliar fertilizer helps plants absorb nutrients more quickly through the leaf tissue, which can accelerate the process of photosynthesis and vegetative growth, especially in the early stages of growth. The optimal dose recommended in this study is a 1.5% concentration of foliar fertilizer. Research by Isnaini et al., (2014) shows that the application of organic foliar fertilizer at a concentration of 2% significantly increased the number of fruits, fruit weight, and capsaicin content in cayenne peppers, compared to plants that were not given foliar fertilizer.

Foliar fertilizer was applied in the early growth phase and after the plants were 30 days old. The results showed an increase in plant height, number of leaves, and stem diameter, all of which contributed to increased corn seed production. This study highlights the importance of foliar fertilizer application to optimize the absorption of micronutrients that are difficult to absorb from the soil[14] .

Foliar fertilizer applied during the vegetative and generative phases showed positive results in increasing the number of productive tillers, plant height, and grain weight per plant. Foliar fertilizer application also accelerates flowering and ripening, making the plants ready for harvest sooner[15] . This study aims to evaluate the effect of potassium and Super-flora fertilizer application on improving chili plant growth and yield, as well as to determine the most effective application rate for increasing the productivity of this crop.

2 Methods

This study was conducted at the experimental field of the Faculty of Agriculture, Muhammadiyah University Sidoarjo, from November 2024 to January 2025. The climate and soil conditions at the research site were recorded to consider environmental factors that affect the results.

The materials used in this study were Capsicum annuum L. chili pepper seeds, potassium fertilizer (K2O), Super-flora organic leaf fertilizer, planting media (soil, compost, and husks), and water for irrigation. The tools used were: plant growth measuring tools (measuring tape, scales, and calipers); watering tools (sprayer, bucket); soil cultivation tools (hoe, shovel, and rake); thermometer and hygrometer for measuring air temperature and humidity.

This study used a Randomized Block Design (RBD) with two treatment factors: Factor 1: Potassium (K) Fertilizer Dosage with 3 treatment levels: K1: 100 kg K2O/ha, K2: 150 kg K2O/ha, K3: 200 kg K2O/ha, Factor 2: Super-flora Leaf Fertilizer Concentration (S) with 3 treatment levels: S1: 10 ml/liter, S2: 15 ml/liter, S3: 20 ml/liter. Each treatment was repeated 3 times, resulting in 27 experimental plots (3 potassium doses × 3 leaf fertilizer concentrations × 3 repetitions). Each experimental plot measured 2 m x 2 m, with a planting distance of 50 cm x 50 cm, and contained 16 chili plants.

The research procedure began with land preparation: the land was cultivated and experimental plots were made according to the design. The soil was mixed with compost before planting. Planting: 4-week-old chili seedlings were planted in each experimental plot. Fertilization: Potassium fertilizer was applied directly to the soil at the beginning of plant growth according to the treatment dose (K1, K2, and K3). Super-flora foliar fertilizer was sprayed on the plants every 2 weeks according to the treatment concentration (S1, S2, and S3). Maintenance: Watering was carried out every day or as needed. Pest and disease control was carried out organically if necessary.

Parameters observed include Plant Growth: Plant height (cm), Number of leaves per plant, Leaf area. The data obtained were analyzed using analysis of variance (ANOVA) to determine the effect of each treatment and the

DEMETER: Journal of Farming and Agriculture
Vol 3, Issue 3, November 2025, Page 297-303
ISSN: 2987-5889 (Media Online)
DOI: https://doi.org/10.58905/demeter.v3i3.699

interaction between potassium fertilizer and Super-flora foliar fertilizer on the growth and yield of chili plants. If the ANOVA test results showed significant differences, a further test using the Honest Significant Difference (HSD) at a 5% significance level was conducted to see the differences between treatments.

3 Results and Discussion

3.1 Plant Height

The analysis of variance results showed that the potassium fertilizer and Super-flora leaf fertilizer treatments interacted at 28 and 35 days after planting (DAP), the potassium fertilizer treatment had no effect on all observation ages, while the Super-flora leaf fertilizer treatment had an effect on chili plant growth at 14 DAP. Further tests can be seen in Tables 1 and 2.

Table 1. Average treatment of Potassium Fertilizer and Super-flora Leaf Fertilizer on plant height (cm)

Treatment	Age			
	7	14		21
Potassium fertilizer 100 kg/ha	13.28	21.52		25.39
Potassium fertilizer 150 kg/ha	13.30	20.03		23.78
Potassium fertilizer 200 kg/ha	13.11	20.44		25.33
BNJ 5%	**tn**	**tn**		**tn**
Super Flora Leaf Fertilizer 10 ml/l	13.41	19.17	a	24.22
Super Flora Leaf Fertilizer 15 ml/l	13.23	22.61	b	25.00
Super Flora Leaf Fertilizer 20 ml/l	13.04	20.22	ab	25.28
BNJ 5%	**tn**	**2.05**		**tn**

Note: Identical numbers in the same column indicate no significant difference, tn = not significant.

Table 1 shows the average height of chili plants under various potassium fertilization treatments and Super-Flora foliar fertilizer at 7, 14, and 21 days after planting (DAP). The results indicate that at 7 DAP, plant height was relatively uniform across all treatments, ranging from 13.04 cm to 13.41 cm, with no significant differences based on the 5% BNJ test. At 14 DAP, the Super-Flora foliar fertilizer treatment at 15 ml/l produced the highest growth (22.61 cm), which was significantly different from the other treatments, while the Super-Flora foliar fertilizer treatment at 10 ml/l showed the lowest growth (19.17 cm). Meanwhile, the application of potassium fertilizer at various doses did not show significant differences in plant height growth.

At 21 days after sowing, plant height still showed an almost uniform growth pattern across all treatments, ranging from 23.78 cm to 25.39 cm. There were no significant differences between the potassium fertilizer and Super-Flora foliar fertilizer treatments based on the 5% BNJ test, indicating that the effect of fertilization on plant height began to even out at this stage of growth. However, the Super-Flora foliar fertilizer treatment at 15 ml/l still showed good growth compared to other doses. These results indicate that the application of Super-Flora foliar fertilizer can have a faster effect on the growth of cayenne pepper plants, especially in the early stages of growth, compared to potassium fertilization, which tends to have a more stable effect over time.

Table 2. Average interaction of potassium fertilizer and Super-Flora foliar fertilizer treatments on plant height (cm)

Treatment	28		35	
K1S1	32.00	ab	43.67	ab
K1S2	30.67	ab	50.00	b
K1S3	38.67	b	51.00	b
K2S1	27.67	a	34.67	a
K2S2	33.00	ab	42.83	ab
K2S3	34.00	ab	49.67	b
K3S1	36.67	ab	49.67	b
K3S2	32.67	ab	53.67	b

DEMETER: Journal of Farming and Agriculture
Vol 3, Issue 3, November 2025, Page 297-303
ISSN: 2987-5889 (Media Online)
DOI: https://doi.org/10.58905/demeter.v3i3.699

K3S3	32.33	ab	43.00	ab
Bnj 5%	9.77		14.03	

Note: Identical numbers in the same column indicate no significant difference.

Table 2 shows the average height of chili plants at 28 and 35 days after planting (DAP) based on the interaction between potassium fertilizer treatments (K1: 100 kg/ha, K2: 150 kg/ha, K3: 200 kg/ha) and Super-Flora foliar fertilizer (S1: 10 ml/l, S2: 15 ml/l, S3: 20 ml/l). At 28 DAP, the K1S3 treatment (100 kg/ha potassium + 20 ml/l foliar fertilizer) showed the highest growth (38.67 cm) and was significantly different from the K2S1 treatment (150 kg/ha potassium + 10 ml/l foliar fertilizer), which had the lowest growth (27.67 cm). At 35 days after planting, the K3S2 treatment (200 kg/ha potassium + 15 ml/l foliar fertilizer) produced the highest plant height (53.67 cm) and was significantly different from several other treatments, especially K2S1, which still showed the lowest growth (34.67 cm). These results indicate that the combination of potassium fertilizer at a higher dose (200 kg/ha) and Super-Flora foliar fertilizer at a moderate to high dose (15–20 ml/l) can provide more optimal plant growth, especially during the later growth stages.

3.2 Number of Leaves

Analysis of variance results showed that there was no interaction between potassium fertilizer and Super-Flora foliar fertilizer treatments at all ages. Potassium fertilizer treatment had no effect on plant growth at all observation ages, while Super-Flora foliar fertilizer treatment had no effect on plant growth at all ages. Further tests can be seen in Table 3.

Table 3. Average Treatment of Potassium Fertilizer and Super-flora Leaf Fertilizer on the Number of Leaves (Pieces)

Treatment	Age				
	7	14	21	28	35
Potassium fertilizer 100 kg/ha	4.89	9.44	11.89	16.33	18.44
Potassium fertilizer 150 kg/ha	4.33	9.00	10.44	13.89	17.22
Potassium fertilizer 200 kg/ha	4.56	10.56	10.67	17.00	19.56
BNJ 5%	tn	tn	tn	tn	tn
Super Flora Leaf Fertilizer 10 ml/l	4.89	9.11	10.67	14.33	18.78
Super Flora Leaf Fertilizer 15 ml/l	4.22	9.78	11.44	15.67	18.67
Super Flora Leaf Fertilizer 20 ml/l	4.67	10.11	10.89	17.22	17.78
BNJ 5%	tn	tn	tn	tn	tn

Note: tn = not significant.

Table 3 shows the average number of leaves on chili pepper plants under various potassium fertilizer and Super-Flora foliar fertilizer treatments at 7 to 35 days after planting (DAP). The results indicate that the number of leaves tends to increase with plant age, although there are no significant differences (n.s.) based on the 5% BNJ test. In the potassium fertilizer treatment, a dose of 200 kg/ha produced the highest number of leaves at 35 DAP (19.56 leaves), while a dose of 150 kg/ha showed the lowest number of leaves (17.22 leaves). Meanwhile, in the Super-Flora foliar fertilizer treatment, a dose of 20 ml/l produced the highest number of leaves at 28 DAP (17.22 leaves), but slightly lower than the 10 ml/l dose at 35 DAP. Although there were no significant differences, the data trend showed that the potassium fertilizer dose of 200 kg/ha and the Super-Flora foliar fertilizer dose of 20 ml/l tended to produce more leaves than the other doses, which could contribute to increased photosynthesis and plant growth.

3.3 Leaf Area

The analysis of variance showed that the potassium fertilizer and Super-flora foliar fertilizer treatments did not interact at any age. The potassium fertilizer treatment had no effect on any observation age, while the Super-flora foliar fertilizer treatment had no effect on plant growth at any age. Further tests can be seen in Table 4.

DEMETER: Journal of Farming and Agriculture
Vol 3, Issue 3, November 2025, Page 297-303
ISSN: 2987-5889 (Media Online)
DOI: https://doi.org/10.58905/demeter.v3i3.699

Table 4. Average treatment of Potassium Fertilizer and Super-flora Leaf Fertilizer on leaf area ($^{cm^2}$)

Treatment	Age				
	7	14	21	28	35
Potassium fertilizer 100 kg/ha	35.58	279.27	477.99	895.11	1766.95
Potassium Fertilizer 150 kg/ha	27.89	248.40	411.76	744.03	1626.61
Potassium fertilizer 200 kg/ha	32.59	277.49	418.73	1042.51	2085.51
BNJ 5%	tn	tn	tn	tn	tn
Super Flora Leaf Fertilizer 10 ml/l	36.93	243.92	359.31	810.96	1686.43
Super Flora Leaf Fertilizer 15 ml/l	28.30	272.06	445.87	804.89	1335.96
Super Flora Leaf Fertilizer 20 ml/l	30.84	289.18	503.30	1065.80	2456.69
BNJ 5%	tn	tn	tn	tn	tn

Note: tn = not significant.

Table 4 shows the average leaf area of chili plants under various potassium fertilizer and Super-Flora foliar fertilizer treatments from 7 to 35 days after planting (DAP). In general, leaf area increased with plant age, although there were no significant differences (n.s.) based on the 5% BNJ test. In the potassium fertilizer treatment, a dose of 200 kg/ha produced the highest leaf area at 35 DAP (2085.51 cm²), while a dose of 150 kg/ha had the lowest leaf area (1626.61 cm²). Meanwhile, in the Super-Flora foliar fertilizer treatment, the 20 ml/l dose showed the highest leaf area at 35 days after planting (2456.69 cm²), which was greater than the other doses. These results indicate that the combination of high-dose potassium fertilizer (200 kg/ha) and high-dose Super-Flora foliar fertilizer (20 ml/l) tends to increase leaf area, which plays an important role in enhancing photosynthetic efficiency and supporting the growth and productivity of chili plants.

3.4 Discussion

The results of the study indicate that the application of potassium fertilizer and Super-Flora foliar fertilizer affects the growth of cayenne pepper plants, particularly in terms of increasing plant height, number of leaves, and leaf area. Potassium fertilizer is a macro nutrient that plays an important role in plant physiological processes, such as cell wall formation, enzyme activation, and osmotic regulation, thereby enhancing vegetative growth[16] . Potassium application at a dose of 200 kg/ha tends to produce better growth than lower doses, indicating that optimal potassium availability supports maximum chili pepper development.

In addition, the application of Super-Flora foliar fertilizer also contributes to the increased growth of cayenne pepper plants. Foliar fertilizer works by providing nutrients directly through the stomata and cuticle of the leaves, so it is absorbed more quickly than fertilizer applied through the soil[17] . From the results of the study, a dose of 20 ml/l of Super-Flora foliar fertilizer produced the largest leaf area, which plays a role in increasing photosynthetic efficiency. This is consistent with research by Sembiring and Maghfoer, (2018) which states that larger leaf area allows plants to absorb more light for photosynthesis, which ultimately increases growth and yield.

Although there is a trend of increased growth with higher fertilizer doses, the results of the 5% BNJ test indicate that differences between treatments are not always significant. This may be due to other factors such as environmental conditions, water availability, or the plant's absorption capacity of the nutrients provided[19] . Several previous studies have also mentioned that fertilizer efficiency is influenced by the interaction between nutrients in the soil and other external factors. Therefore, further research is needed to determine the optimal dose that not only increases growth but also the efficiency of nutrient utilization by plants.

Thus, the combination of potassium fertilizer and Super-Flora foliar fertilizer has the potential to increase the growth of cayenne pepper plants. Higher fertilizer doses tend to give better results, but they need to be adjusted to the needs of the plants to avoid wasting resources or causing negative impacts on the environment. The use of foliar fertilizer as a soil fertilization supplement has been proven to support faster vegetative plant growth, consistent with research by Satriyo and Aini, (2019) that proper application of foliar fertilizer can increase nutrient absorption efficiency and accelerate the growth of horticultural plants.

4 Conclusion

The results of the study indicate that the application of potassium fertilizer and Super-Flora foliar fertilizer affects the growth of chili plants, particularly in increasing plant height, number of leaves, and leaf area. A potassium fertilizer dose of 200 kg/ha and a Super-Flora foliar fertilizer dose of 20 ml/l tend to provide the best growth compared to other doses, although the 5% BNJ test results show that the differences between treatments are not always significant. Potassium fertilizer plays a role in enhancing vegetative growth through osmotic regulation and enzyme activation ( ), while Super-Flora foliar fertilizer provides nutrients that are quickly absorbed through the leaves, thereby supporting more efficient photosynthesis. Therefore, the combination of potassium fertilizer and Super-Flora foliar fertilizer can be an effective strategy in enhancing the growth of chili pepper plants, but the dosage used needs to be adjusted to the needs of the plants to achieve optimal results.

Acknowledgments

The author would like to express his deepest gratitude to all those who contributed to this research. Special thanks go to the supervising lecturer for the guidance, input, and support provided during the research process. The author would also like to thank his family and friends for their continuous moral support and motivation. In addition, the highest appreciation is conveyed to those concerned for the opportunity given to conduct this research, as well as to the respondents and participants who have taken the time and shared valuable information. The author hopes that this research will be useful for all interested parties.

References

[1] O. Komoditas and T. Pangan, "Page 114 - Outlook TPHORTI 2017," pp. 2020–2021, 2021.

[2] M. Wang, Q. Zheng, Q. Shen, and S. Guo, "The critical role of potassium in plant stress response," *Int. J. Mol. Sci.*, vol. 14, no. 4, pp. 7370–7390, 2013, doi: 10.3390/ijms14047370.

[3] M. Hasanuzzaman *et al.*, "Potassium: A vital regulator of plant responses and tolerance to abiotic stresses," *Agronomy*, vol. 8, no. 3, 2018, doi: 10.3390/agronomy8030031.

[4] A. Keumala, N. Nurhayati, and M. Hayati, "Pengaruh Dosis Pupuk Fosfor dan Kalium Terhadap Pertumbuhan dan Hasil Tanaman Talas (Colocasia esculenta L. Schott var. Antiquorum)," *J. Ilm. Mhs. Pertan.*, vol. 4, no. 2, pp. 1–10, 2020, doi: 10.17969/jimfp.v4i2.10912.

[5] G. A. Pangestu, E. Maulana, F. Ali, R. Kartina, B. Safitri, and Dede Tiara, "Pengaruh Konsentrasi Pupuk Kalium Nitrat (KNO3) dan Kalium Dihidrophosphate(KH2PO4) Terhadap Pertumbuhan dan Hasil Cabai Merah Keriting," *J. Hortic. Prod. Technol.*, vol. 1, no. 2, pp. 64–72, 2023, [Online]. Available: https://jurnal.polinela.ac.id/jht

[6] A. Sari Widyanti and A. D. Susila, "Rekomendasi Pemupukan Kalium pada Budi Daya Cabai Merah Besar (Capscicum annuum L) di Inceptisols Dramaga," *J. Hortik. Indones.*, vol. 6, no. 2, pp. 65–74, 2015, doi: 10.29244/jhi.6.2.65-74.

[7] V. Mulya Deviyanti, B. Adi Kristanto, F. Kusmiyati, P. Studi Agroekoteknologi, and F. Peternakan dan Pertanian, "Pengaruh Pemberian Pupuk Kalium dan Giberelin terhadap Pertumbuhan dan Produksi Tanaman Cabai (Capsicum annum L.)," *J. Agroplasma*, vol. 10, no. 1, pp. 358–367, 2023.

[8] A. Nurwanto, R. Soedradjad, and N. Sulistyaningsih, "APLIKASI BERBAGAI DOSIS PUPUK KALIUM DAN KOMPOS TERHADAP PRODUKSI TANAMAN CABAI RAWIT (Capsicum frutescens L.)," *Agritrop*, vol. 15, no. 2, pp. 181–193, 2017.

[9] G. L. M. Sari, R. R. D. Pertami, and E. Eliyatiningsih, "APLIKASI PUPUK KALIUM TERHADAP PERTUMBUHAN DAN PRODUKSI TANAMAN CABAI MERAH BESAR (Capsicum annuum L.)," *Agropross Natl. Conf. Proc. Agric.*, pp. 221–233, 2022, doi: 10.25047/agropross.2022.292.

[10] T. Nurfira, A. Abdullah, and B. Ibrahim, "PENGARUH PUPUK NITROGEN DAN KALIUM TERHADAP PRODUKSI SERTA KANDUNGAN VITAMIN C PADA BUAH CABAI RAWIT (Capsicum frutescens L.)," *AGrotekMAS J. Indones. J. Ilmu Peranian*, vol. 1, no. 3, pp. 86–95, 2021, doi: 10.33096/agrotekmas.v1i3.121.

[11] Aristama and Sumarji, "PENGARUH DOSIS PUPUK ZA DAN PPC SUPER FLORA TERHADAP PERTUMBUHAN DAN PRODUKSI TANAMAN MENTIMUN (Cucumis Sativus L) VARIETAS HARMON," *J. Hijau Cendikia*, vol. 1, no. 1, pp. 11–16, 2016.

[12] M. S. Haq, Y. Rachmiati, and Karyudi, "Pengaruh pupuk daun terhadap hasil dan komponen hasil pucuk tanaman teh (Camellia sinensis (L.) O. Kuntze var. Assamica (Mast.) Kitamura)," *J. Penelit. Teh dan Kina*, vol. 17, no. 2, pp. 47–56, 2014.

[13] M. Isnaini, A. Rahmi, and A. P. Sujalu, "PENGARUH JENIS DAN KONSENTRASI PUPUK DAUN TERHADAP PERTUMBUHAN DAN HASIL TANAMAN TERUNG(Solanum melongena L.) VARIETAS MUSTANG F1 (EFFECT OF LEAF FERTILIZER TYPE AND CONCENTRATION TOWARDS GROWTH AND RESULTS OF PLANT PLANT (Solanum melongena L.) VARIETY O," *Agrovigor*, vol. XIII, no. D, pp. 59–66, 2014.

[14] I. H. M. Ahmed *et al.*, "Impact of plant growth regulators spray on fruit quantity and quality of pepper (Capsicum annuum L.) cultivars grown under plastic tunnels," *Saudi J. Biol. Sci.*, vol. 29, no. 4, pp. 2291–2298, 2022, doi: 10.1016/j.sjbs.2021.11.062.

[15] F. S. Manurung, Y. Nurchayati, and N. Setiari, "Pengaruh Pupuk Daun Gandasil D Terhadap Pertumbuhan , Kandungan Klorofil dan Karotenoid Tanaman Bayam Merah (Alternanthera amoena Voss .)," *J. Biol. Trop.*, vol. 3, no. 1, pp. 24–32, 2020.

[16] Suryawaty, "Optimasi kalium sulfat (K2SO4) dan pupuk kandang terhadap pertumbuhan dan produksi cabai merah (Capsisum annum L.)," *Agrium*, vol. 18, no. 1, pp. 102–107, 2013.

[17] R. Rahmawati B., S. Subaedah, and A. Ralle, "PENGARUH JENIS PUPUK DAUN TERHADAP PERTUMBUHAN TANAMAN HIAS EKOR NAGA (Epipremnum pinnatum L.)," *AGrotekMAS J. Indones. J. Ilmu Peranian*, vol. 2, no. 3, pp. 62–67, 2021, doi: 10.33096/agrotekmas.v2i3.214.

[18] G. Sembiring and M. D. Maghfoer, "Pengaruh Komposisi Nutrisi Dan Pupuk Daun Pada Pertumbuhan Dan Hasil Tanaman Pakcoy (Brassica Rapa L.Var. Chinensis) Sistem Hidroponik Rakit Apung.," *Plantaropica J. Agric. Sci.*, vol. 3, no. 2, pp. 103–109, 2018.

[19] M. Muzadi, C. Anam, and A. Amiroh, "Efektivitas pemupukan daun terhadap hasil tanaman cabai rawit (Capsicum frutescen L.)," *Bina Wakya*, vol. 14, no. 12, pp. 3703–3706, 2020.

[20] M. A. Satriyo and N. Aini, "Pengaruh Jenis Dan Tingkat Konsentrasi Pupuk Daun Terhadap Pertumbuhan Dan Hasil Tanaman Terong (Solanum Melongena L.)," *J. Produksi Tanam.*, vol. 6, no. 7, pp. 1473–1480, 2019, [Online]. Available: http://protan.studentjournal.ub.ac.id/index.php/protan/article/view/800