Your Reference :
Our Reference : arsvot/iam2023/sj/sa(1)
Date : 1st June 2023

Dr. Ir. Paiman, M.P.
Rector
Jl. IKIP PGRI I Sonosewu
No.117, Sonosewu,
Ngestiharjo, Kec. Kasihan, Kabupaten Bantul,
Daerah Istimewa Yogyakarta 55182, Indonesia

Dr.,

INVITED AS KEYNOTE SPEAKER FOR INTERNATIONAL INNOVATION ARSVOT MALAYSIA 2023 (IAM2023)

The above matter is kindly referred.

2. We are pleased to inform you, Association for Researcher of Skills and Vocational Training (ARSVOT) will organise an International Innovation ARSVOT Malaysia 2023 (IAM2023) on 24-25th June 2023 via hybrid approach and we already collaborate with Department of Skills Development (Malaysia), Satbayev University (Kazakhstan) and Universitas Negeri Padang (Indonesia). We have already organized the IAM2021 event which involved 1300 participants and IAM2022 which we received 1400 participations.

3. We would like to invite you as the keynote speaker for IAM2023. We believe that the involvement of lecturers, teachers and students can unearth new talent as well as hone participation in this conference event. IAM2023 event information can be found on the website at https://iam2023.com.

4. In addition, ARSVOT also organise the International Conference on Sustainability Engineering Education 24-25 June 2023 where this event all the accepted proceeding paper will be index in AIP Scopus proceeding. The paper is limited under the theme of "Sustainable Environment & Innovative Engineering and Education". ICSEE2023 event information can be found on the website at https://icsee2023.com.

5. Any questions, you can contact the IAM2023 secretariat and ICSEE2023 secretariat at +6011-20550840 or email admin@arsvot.com. Your cooperation in this matter is highly regarded and thank you in advance.

Thank you.

(Ts. Dr. Zulkifli bin Mohd Sidi, AMN)
Director,
Association for Researcher of Skills and Vocational Training (ARSVOT

TWO MAIN EVENTS

Innovation Competition

The innovation competition will be evaluated via online whereby the top winners of each category will be honored to attend our physical event in Corus Hotel, Kuala Lumpur, Malaysia. Three (3) categories will be opened: Vocational College, Tertiary Institution, and Open Category

Conference

The similar mechanism applied for the conference paper presentation where we will be conducting it via hybrid mode. The participants of the conference and presenter of the conference paper have the opportunity to present their paper physically on 24th June 2023 at the Corus Hotel Kuala Lumpur.

Organiser

International Innovation ARSVOT Malaysia 2023 (IAM2023) are organized by Department of Skills Development (JPK), The Ministry of Human Resources and Association for Researcher of Skills and Vocational Training (ARSVOT) is an education association

Co-Oragnisers

International Innovation ARSVOT Malaysia 2023 (IAM2023) co-organizer by Universitas Negeri Semarang, Indonesia; Universitas Negeri Padang, Indonesia; Institute of Metallurgy and Ore Beneficiation, Satbayev University ,Kazakhstan, Uniglobal Education Academy, Malaysia and Todox Digital Network, Malaysia.

Organized by:

JPK

ARSVOT
ASSOCIATION FOR RESEARCHER OF SKILLS AND VOCATIONAL TRAINING

Co-Organized by:

UNNES

IMOB

TDNETWORK
TODOX DIGITAL NETWORK

CONTACT US

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+6011-2055 0840

iam2023

iam2023

Register here:
www.iam2023.com

INTERNATIONAL INNOVATION ARSVOT MALAYSIA 2023

IAM2023

24 – 25 JUNE 2023

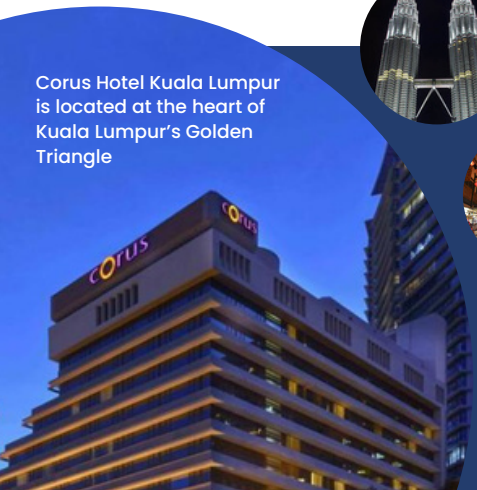
CORUS HOTEL, KUALA LUMPUR, MALAYSIA

About IAM2023

International Innovation ARSVOT Malaysia 2021 (IAM2021) and International Innovation ARSVOT Malaysia 2022 (IAM2022) successfully organized where we received participation more than 600 groups which equivalent more than 2500 participants in this prestigious events. We are also consistently supported by the Department of Skills Development, Ministry of Human Resources Malaysia whom sponsored the awards for the winners.

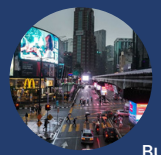
HYBRID EVENT

This year we will organize the event in the hybrid form: The innovation competition will be evaluated via online whereby the top winners of each category will be honored to attend our physical event in Corus Hotel, Kuala Lumpur, Malaysia which is located at the heart of Kuala Lumpur's Golden Triangle: Kuala Lumpur City Centre (KLCC), Bukit Bintang, and Chinatown. The similar mechanism applied for the conference paper presentation where we will be conducting it via hybrid mode. The participants of the conference and presenter of the conference paper have the opportunity to present their paper physically on 24th June 2023 at the Corus Hotel.



KLCC


Chinatown


Bukit Bintang

KEYNOTE Speakers

Three (3) international keynote speakers will share their knowledge and expertise in IAM2023

Dr. Thanawit Bunsit
Head of Economics Department,
Thaksin University,
Thailand

Dr. Ir. Paiman, MP
Rector of Universitas
PGRI Yogyakarta,
Indonesia

Prof. Dr. Rudi Hartono, M. PD.
Head of Quality Assurance, English
Language and Literature Department
Universitas Negeri Semarang
Indonesia

Prizes

PREMIUM MEDAL
CASH UP TO RM8000
IAM GRANT

Regardless of the geographical boundary of each participant, we are committed to bringing everyone connected via online and physical presence to join this meaningful event. Thus, please grab this right moment to explore your capabilities as an innovator, participating in IAM 2023 via online and be the top award winners so that you can be with us at the Corus Hotel Kuala Lumpur, Malaysia. Be the innovators who strive for the betterment of the world and make use this platform for others to recognize your innovation.

For more info: www.iam2023.com

"INNOVATIONS TOWARDS SDG 2030"

This innovation competition and conference is the most suitable platform for innovators, academicians and related stakeholders sharing their creative innovations related to this year's theme of IAM 2023: Innovations Towards SDG 2030. The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The 17 goals in SDG 2030 are integrated—they recognize that action in one area will affect outcomes in others, and that development must balance socially, economically and environmentally.

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LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT
Jl. PGRI I No. 117 Sonosewu, Yogyakarta, 55182 Telp/Fax: (0274) 376808
Web: http://lppm.upy.ac.id Email: lppm@upy.ac.id

SURAT TUGAS

Nomor: 0977/Publikasi - UPY/VI/2023

Yang bertanda tangan di bawah ini Kepala Pusat Publikasi LPPM Universitas PGRI Yogyakarta memberikan tugas kepada :

Nama	: Dr. Paiman, MP
NIS	: 19650916 199503 1 003
Unit Kerja	: Agroteknologi

Untuk menjadi ***Keynote Speaker*** dalam **INTERNATIONAL INNOVATION ARSVOT MALAYSIA 2023 (IAM2023)**, yang akan dilaksanakan pada :

Tanggal	: 24 - 25 Juni 2023
Penyelenggara	: Department of Skills Development (JPK), The Ministry of Human Resources and Association for Researcher of Skills and Vocational Training (ARSVOT)
Tempat	: Corus Hotel, Kuala Lumpur, Malaysia

Demikian surat tugas ini dibuat untuk dapat digunakan sebagaimana mestinya.

Yogyakarta, 19 Juni 2023
Kepala Pusat Publikasi

Ari Kusuma W., S.T., M.Cs
NIS. 19910423 201805 1 004

CERTIFICATE

OF APPRECIATION

PROUDLY PRESENTED TO

Dr. Ir. Paiman, MP

FOR HIS / HER ACTIVE PARTICIPATION AS A

Keynote Speaker

(THE EFFECT OF PLANT SPACING ON RICE YIELD IN DIFFERENT VARIETIES)

IN

INTERNATIONAL INNOVATION ARSVOT MALAYSIA
(IAM2023)

VIA
ZOOM ONLINE

ON
24th - 25th JUNE 2023

Ts. Dr. Zulkifli bin Mohd Sidi (A. M. N.)
Chairman
Association for Researcher of Skills and Vocational Training (ARSVOT)
Malaysia

Ts. Dr. Mohamad bin Sulaiman (K. M. N.)
Deputy Director General (Development)
Department of Skills Development
Ministry of Human Resources
Malaysia

- Assalamualaikum warahmatullahi wabarakatuh
- Peace be upon us all
- Dear international seminar participants.
- Thank you, I convey to the seminar committee who have given me the opportunity to be a keynote speaker at this international seminar.
- Introduce, my name is Assoc. Prof. Dr. Ir. Paiman, M.P., from Yogyakarta, Indonesia. At this time, I served as rector Universitas PGRI Yogyakarta, Indonesia.
- Today, I will present a seminar material entitled: The effect of plant spacing in different varieties.

INTERNATIONAL INNOVATION ARSVOT MALAYSIA 2023
24-25 JUNE 2023 | CORUS HOTEL KUALA LUMPUR, MALAYSIA

THE EFFECT OF PLANT SPACING IN DIFFERENT VARIETIES

Oleh:
Assoc. Prof. Dr. Ir. Paiman, M.P.
Rector
UNIVERSITAS PGRI YOGYAKARTA
Indonesia

"INNOVATIONS TOWARDS SDG 2030"

Organized by: JPK ARSVOT Co-Organized by: UNNES IMOB TDNETWORK

1. INTRODUCTION

- Rice is one of the food crops cultivated by most of the world's population. Asian countries dominate global rice production (Gadal et al., 2019), especially Indonesia.
- Rice consumption increases every year along with population increases (Suryani et al., 2016). Rice is a daily staple for about 95% of Indonesia's population. Rice has also been a strategic political commodity since the beginning of independence.
- The Government of Indonesia has greatly increased rice production for national needs (Swastika et al., 2007).

- Until now, Indonesia is trying to achieve rice self-sufficiency so efforts are needed to increase rice production. One of the components of technology is the use of plant spacing and superior variety.
- A number of new superior varieties have been created by the Agricultural Research and Development Agency, for rainfed fields, swampland, and irrigated fields. The creation of rice varieties is one of the technological components that markedly contributes to increase production.
- Superior varieties capable of adapting using specific environments can provide maximum yields than varieties with wide adaptation.
- Ciherang and Padjajaran Agritan are part of superior varieties of rice for irrigated fields that are in demand by farmers in Indonesia.
- The use of plant spacing for both rice varieties must be appropriate so that production is maximized.

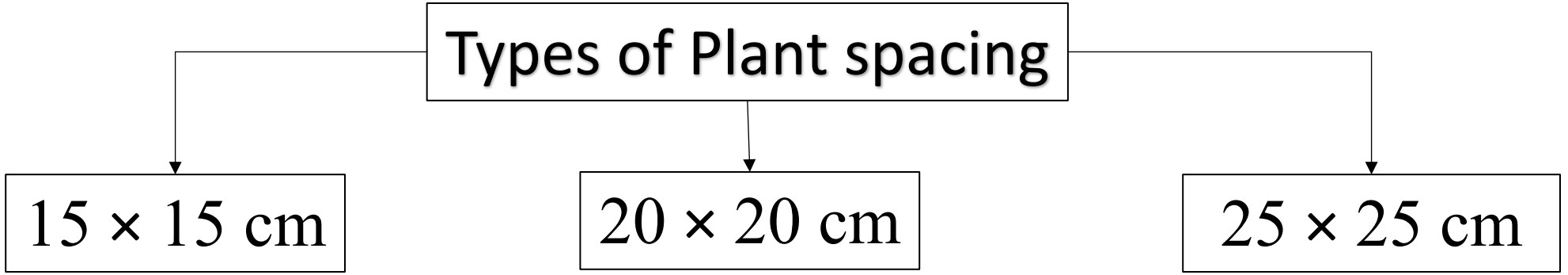
Description of rice variety

For Ciherang variety:

- It has a lifespan of 116-125 days with a plant height of 107-125 cm.
- Resistant to brown stem leafhopper pests biotypes 2 and 3. Also, resistant to bacterial late blight disease fatotypes III and IV.
- Can be planted in rainy and dry seasons below an altitude of 500 meters above sea level.
- Average production is 5-7 tons/ha.

For Padjajaran Agritan variety:

- It has a harvest age of 105 days with a plant height of 97 cm.
- Somewhat resistant to brown stem leafhoppers biotypes 1 and 2, but somewhat susceptible to biotype 3. Also, it is somewhat resistant to bacterial late blight disease strains IV and VIII.
- Can be planted in lowlands up to an altitude of 600 meters above sea level.
- Average production is 7.8 tons/ha.



- Plant spacing determines the optimal number of crop populations per hectare related to maximum rice yield.
- There are three choices of plant spacing that are widely used in Indonesia, namely: 15 × 15, 20 × 20, and 25 × 25 cm.
- Plant density is a key indicator in determining plant spacing. Therefore, crop density needs to be monitored to ensure that decisions in crop management are correct (Abu Bakar et al., 2020).
- The density of rice crops will contribute to early canopy closure, and ultimately high biomass production and grain yields (Lu et al., 2021).
- Proper plant spacing can avoid competition between crops for light, water, nutrients, and carbon dioxide.
- Therefore, this study aimed to determine the suitable plant spacing in different varieties.

2. METHODS

- The research was conducted in Yogyakarta from October 2022 to January 2023 with latosol soil type.
- The study was factorial and arranged in a randomized complete block design with three blocks.
- The first factor was plant spacing consisting of three kinds: 15 × 15, 20 × 20, and 25 × 25 cm.
- The second factor was rice varieties consisting of two types, namely: Ciherang and Padjajaran Agritan.
- The variables of plant height, tillers number, leaf greenness, and sunlight capture were observed at 80 days after planting (DAP), but a grain dry weight was observed at 105 DAP.

3. RESULTS AND DISCUSSION

The results of the analysis of variance (ANOVA) showed that plant spacing had no significant effect on plant height (cm) and sunlight capture (%). However, planting spacing has a significant effect on the tiller's number and leaf greenness. Results of the DMRT test at 5% significant level can be seen in Table 1.

Table 1. The effect of plant spacing and rice variety on plant height, tillers number, leaf greenness, and sunlight capture at 80 DAP

Treatments	Plant height (cm)	Tillers number (stem)	Leaf greenness (unit)	Sunlight capture (%)
Plant spacing (cm)				
15 × 15	105.53 a	9.77 c	15.68 b	64.63 a
20 × 20	108.23 a	15.83 b	16.52 ab	63.07 a
25 × 25	107.20 a	22.10 a	17.95 a	62.97 a
Rice variety				
Ciherang	107.11 p	15.49 p	15.73 q	63.51 p
Padjajaran Agritan	106.87 p	16.31 p	17.70 p	63.61 p

Table 1 shows that the wide plant spacing could produce more tillers number, while between varieties there was no significant difference. Also, the plant spacing affected the leaf's greenness. The wider plant spacing caused the leaves to look greener. Evidently, the Padjajaran variety has greener leaf than Ciherang at 80 DAP. For more details, the effect of plant spacing on the tiller's number and leaf greenness can be seen in Figures 1a and 1b.

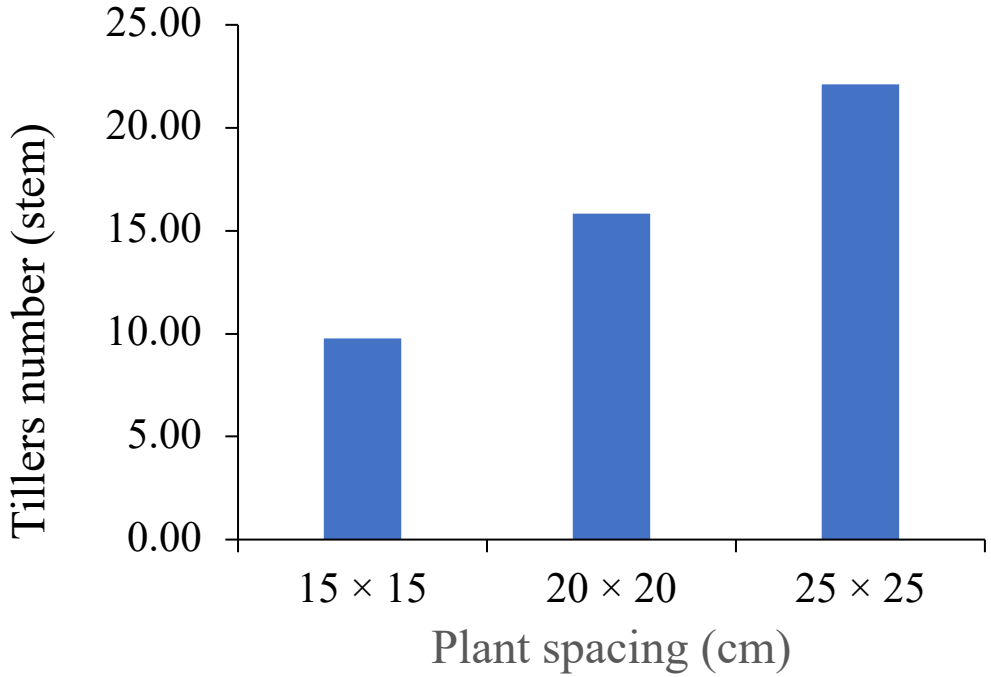


Figure 1a. The effect of plant spacing on tillers number (stem)

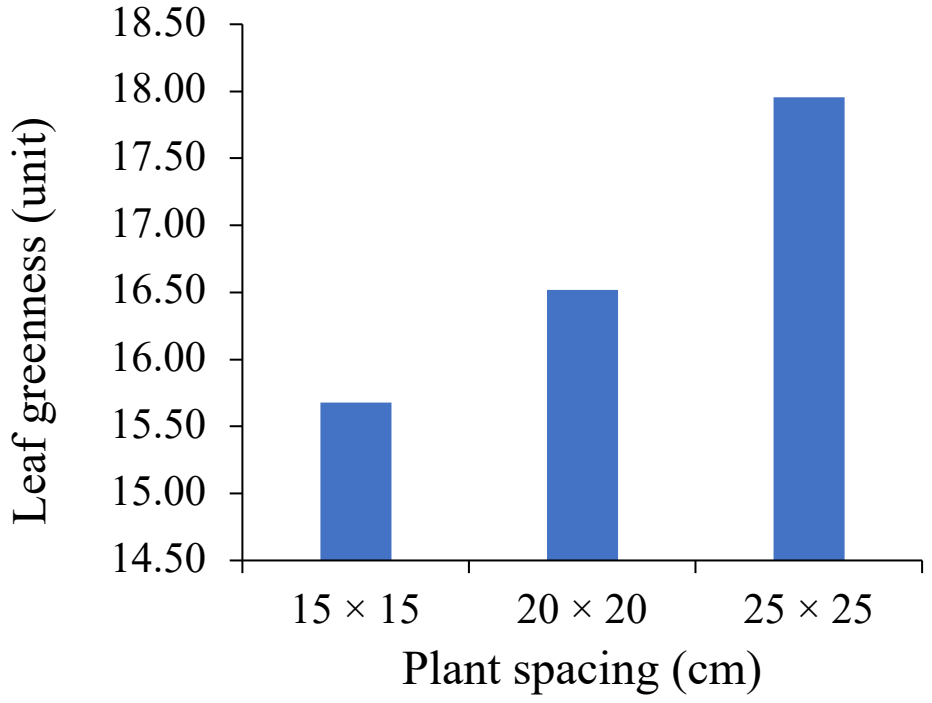


Figure 1b. The effect of plant spacing on leaf greenness (unit)

There was a significant interaction between plant spacing and rice varieties on grain dry weight (g/clump and tons/ha). Results of the DMRT test at 5% significant level can be seen in Table 2.

Table 2. The effect of plant spacing and rice variety on grain dry weight

Treatment combinations of rice variety and plant spacing	Grain dry weight (g/clump)	Grain dry weight (tons/ha)
Ciherang & 15 × 15 cm	11.37 d	5.05 b
Ciherang & 20 × 20 cm	21.47 bc	5.37 b
Ciherang & 25 × 25 cm	39.39 a	6.30 ab
Padjajaran Agritan & 15 × 15 cm	15.91 cd	7.07 a
Padjajaran Agritan & 20 × 20 cm	26.04 b	6.51 ab
Padjajaran Agritan & 25 × 25 cm	34.23 a	5.66 ab

Table 2 shows that the highest grain dry weight per clump was obtained at 25 × 25 cm in Ciherang or Padjajaran Agritan varieties. However, in the Padjajaran Agitan variety, the highest grain dry weight per hectare was obtained at a plant spacing of 15 × 15 cm.

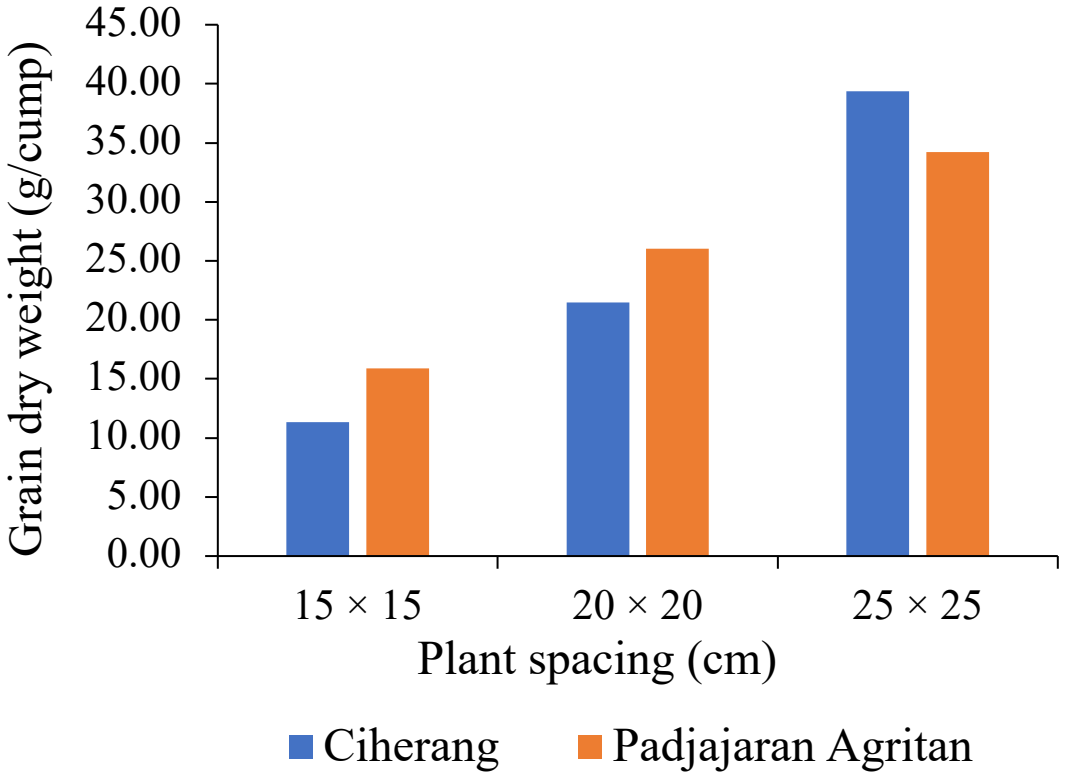
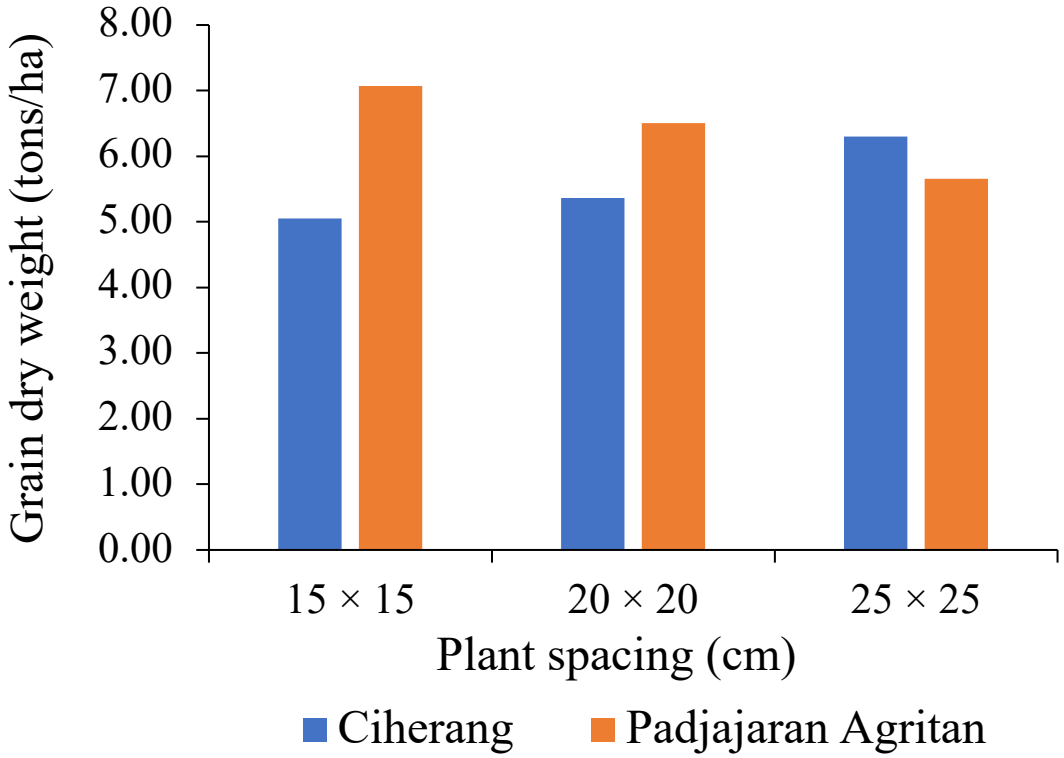


Figure 2a. The effect of plant spacing on grain dry per clump



b. The effect of plant spacing on grain dry weight per hectare

Figure 2a shows that the wider plant spacing caused the greater grain dry weight per clump in both varieties. However, it was different from Figure 2b. In the Padjajaran Agritan variety, it shows that the highest grain dry weight occurred at a plant spacing of 15 × 15 cm. And the wider the plant spacing caused the lower grain dry weight per hectare. The opposite happened in the Ciherang variety.

4. CONCLUSION

- The research results showed that the plant spacing significant affected the growth and yield of rice in different varieties, including tillers number (g/clump), leaf greenness (unit), and grain dry weight (g/clump or tons/ha).
- The higher grain dry weight per clump was produced by plant spacing of 25 × 25 cm for the Ciherang and Padjajaran Agritan varieties. Higher grain dry weight per hectare was obtained at a plant spacing of 15 × 15 cm for the Padjajaran Agriran variety of 7.1 tons/ha.
- Padjajaran Agritan variety could produce grain dry weight higher than Ciherang.
- The research findings show that the Padjajaran Agritan variety with a plant spacing of 15 × 15 cm can produce higher rice yield in latosol soil.
- For future research, the use of plant spacing on many superior varieties of rice needs to be tested again.

Thank you very much

Wassalamualaikum warahmatullahi wabarakatuh