Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	Ni Putu Pandawani
Assignment title:	Article and Proceeding
Submission title:	Effectiveness of Direct Seed Sowing System and Balanced Fe...
File name:	d_Sowing_System_and_Balanced_Fertilizer_on_Rice_Producti...
File size:	226.14K
Page count:	12
Word count:	4,362
Character count:	21,913
Submission date:	24-Jun-2022 09:13AM (UTC+0700)
Submission ID:	1862076817

2nd International Conference on Sustainability Development

EFFECTIVENESS OF DIRECT SEED SOWING SYSTEM AND BALANCED FERTILIZER ON RICE PRODUCTIVITY

Ni Putu Pandawani, I Made Diarta, and I Gede Putra Cahyadi

Mahasaraswati University, Denpasar, Indonesia
pandawaniputu@hotmail.com

Abstract

The purpose of this study was to test the seeding and planting system of balanced fertilizer to increase rice productivity in Subak Tabunan Peninjoan village Tembuku District of Bangli. The study was conducted using test patterns Factorial RCBD with 4 replications. The first factor cropping systems that Transplanting and Sow seeds. The second factor is the application of balanced fertilizer consisting of three packets of fertilizers with a different application, namely Control (Urea: 400; NPK Phonska; 300, POG 300); PI (Urea: 200; NPK Phonska: 300; ZA: 100; POG: 300) and P3 (Urea: 400; NPK Phonska: 300; POG: 300). The number of experimental plots 24 plots with a plot size of 5m x 5m. The results showed the system Sow seeds directly yield of 746% dry grain harvest was significantly higher than the systems of Transplanting Fertilization package 1 (Urea: 200, NPK Phonska: 300, ZA: 100, POG: 300) gives the results of the highest real dry grain harvest compared package 2 (Urea: 250, NPK Phonska: 300, POG: 300) and controls (Urea: 400, NPK Phonska: 300, POG: 300. System sow seeds directly with fertilizer package 1 (Urea: 200, NPK Phonska: 300, ZA: 100, POG: 300) gives a real harvest of dry grain yield highest of6.91 tonnes/ha.

Keywords: rice, direct sowing, transplanting, balanced fertilizer.

313

Effectiveness of Direct Seed Sowing System and Balanced Fertilizer on Rice Productivity

by Ni Putu Pandawani

Submission date: 24-Jun-2022 09:13AM (UTC+0700)
Submission ID: 1862076817
File name: d_Sowing_System_and_Balanced_Fertilizer_on_Rice_Productivity.pdf (226.14K)
Word count: 4362
Character count: 21913

EFFECTIVENESS OF DIRECT SEED SOWING SYSTEM AND BALANCED FERTILIZER ON RICE PRODUCTIVITY

Ni Putu Pandawani, 1 Made Diarta, and I Gede Putra Cahyadi

Mahasaraswati University, Denpasar, Indonesia
pandawaniputu@hotmail.com

Abstract

The purpose of this study was to test the seeding and planting system of balanced fertilizer to increase rice productivity in Subak Tabunan Peninjoan village Tembuku District of Bangli. The study was conducted using test patterns Factorial RCBD with 4 replications. The first factor cropping systems that Transplanting and Sow seeds. The second factor is the application of balanced fertilizer consisting of three packets of fertilizers with a different application, namely Control (Urea: 400; NPK Phonska; 300, POG 300); PI (Urea: 200; NPK Phonska: 300; ZA: 100; POG: 300) and P3 (Urea: 400; NPK Phonska: 300; POG: 300). The number of experimental plots 24 plots with a plot size of 5m x 5m. The results showed the system Sow seeds directly yield of 746% dry grain harvest was significantly higher than the systems of Transplanting Fertilization package 1 (Urea: 200, NPK Phonska: 300, ZA: 100, POG: 300) gives the results of the highest real dry grain harvest compared package 2 (Urea: 250, NPK Phonska: 300, POG: 300) and controls (Urea: 400, NPK Phonska: 300, POG: 300. System sow seeds directly with fertilizer package 1 (Urea: 200, NPK Phonska: 300, ZA: 100, POG: 300) gives a real harvest of dry grain yield highest of6.91 tonnes/ha.

Keywords: rice, direct sowing, transplanting, balanced fertilizer.

1. Introduction

Rice is the main commodities grown by Indonesian farmers and rice is one of the staple food of Indonesia. Therefore, attention will be rice or paddy crop is not no stopping. The existence of continuous developments in science and food technology which enables the rapid increase in production both in terms of quality and kuantitas. Thus, the increase in production is still overshadowed by the rate of population growth is high enough. The increase in production will have an impact on farmers' income increase when there is a guaranteed market and at a price that is more adequate. In rice cultivation in order to obtain optimum yield components, needed proper cultivation methods.

Buididaya rice can be done in various ways, namely by planting among others with Direct Seed Cropping systems (seeding). System of Rice Intensification (SRI) and Move planting or transplanting (Adi Putra, 2012). Guna established to increase production, farmers must implement technology-specific sites, one of which with improved cropping system that is "seeding". When compared with the cropping system transplanting, seeding has several advantages which occurred effectiveness and efficiency as a fast growing, planting little power can be reduced and the cost of planting and fertilization is more efficient and easter because it is done in the array only. Observations and pest control more easily implemented. Rice allers stronger and not stagnated (stress). Wather who later also often be a major problems that must be faced by farmers can be overcome, because the seeding method occurs where the water use efficiency in irrigation discontinuous and the seeding method many tillers and grains of rice are also pithy because sunlight can enter freely on the bolt-bolt made (Pitojo, 2003). Planting rice seeding method has been implemented in several Subak in Bali in 2011, significant productivity, which is the seeding, the average - average propitas reached 70.00 to 82.40 Kw / ha GKP, while the planting of Tapin (plant move) which only reached 65.00 to 68.00 Kw / ha GKP (Editor Galang Kangin, 2012). Direct seeding system (seeding) in paddy require attention to be implemented as one of the basic development of this technology is to improve production efficiency, especially in the use of labor efficiency planting. Besides, seeding technology also has some advantages such as shortening the time of harvest and increase yields compared with Transplanting system.

Besides improve cropping systems in order to increase rice productivity is reached should also be retrofitting the right technology with the application of technology in fertilization is complete with a balanced fertilizer use is one way to maintain the equilibrium of nutrients in the soil. Balanced fertilization is fertilizer based on soil fertility and crop needs for macro and micro elements, so that the dose of fertilizer at each location and crop growth stages will be different (Subroto and Yusriani, 2005). Furthermore, the use of fertilizers would be more profitable if proper attention to five in fertilization ie, the exact kind dosis, fertilizing right place, right time and right method or methods of fertilization. Inaccuracy one of the five principles will provide less efficient fertilization results shown by the low efficiency of fertilization, which means a lot of fertilizer is missing or can not be utilized by the plant and in the end result is not good for the environment shown by the low quality of the soil (Winarso 2005). Until now at the level of farmers, especially farmers in Subak Tabunan Peninjoan Tembuku Bangli village, complete and balanced use of fertilizer application time has not been fully implemented, it is caused by several factors, including lack of knowledge, economic conditions, status as tenant farmers, production sales in the form of slash and other factors are quite complex.

The purpose of this research is to be able to distinguish the productivity of cropping systems Transplanting and seeding. Study type, density and frequency of review of the types of weeds and weed density in some planting and seeding systems that can be planned with proper control effectively and efficiently.

Analysis of paddy rice farming seeding method and system transplanting, this is done rests on one of the main effects of balanced fertilization and seeding method is to obtain maximum results with minimal production costs so as to achieve efficiency of farming. Ultimately obtained rice cultivation technology package is a package that involves seeding and planting system with a complete balanced fertilizer that can be applied to farmers in an effort to increase rice productivity. Results are expected to provide information agriculture, especially crops.

2. Literature Review

Rice plants (Oryza sativa) is one of the types of cereals that are generally cultivated through seedbed system first, after the seedlings grow up to three-week-old seedlings displacement field that had been prepared previously known as transplanting or transplanting . This method is a method commonly used by rice farmers in Indonesia.

According Sutijo (2003) some of the weaknesses of the system Transplanting are: (a) at the time of seedling nurseries removed from the seed will damage the root system. This situation will affect the process of adaptation of plants, where the rice seedlings will stop absorbing water, while on the other hand continues the process of transpiration. If this situation takes places in a rather long time interval, the seeds will experience water shortages , decreased turgor pressure of the guard cell (guard cells), stomata closed, CO2 diffusion depressed and eventually stalled the process of photosynthesis. (b) At the time of the rice plant seeds removed from the nursery will happen wounding the root system, it affects the durability of existing plants where cuts will cause the germs can get into the plant. (c) At the time of rice plants removed from the nursery and transferred to the field, there will be a process of stagnation in which the growth of crop seeds will be suspended until it can adapt to the new environment, (d) through the nursery cultivation system is more suitable for the rainy season because the process of transpiration

(evaporation) can be reduced speed so that the rice seedling can avoid withering process and finally (e) through nursery cultivation system will require more labor to the extent of one hectare which would require approximately 10 workers transplanting and takes approximately 8 hours with great cost arund Rp 250.000,-.

Planting rice seeding method (Sow Seeds Direct) provide several benefits or advantages of transplanting method because it is more efficient Tapin. According Boatomi (2011) some of the advantages of rice cultivation with seeding methods are: (a) wet seeded ensure proper spacing of more regular and thus the production of the farmers obtained more 50 - 1000 kilograms of dry grain per hectare compared to the nursery system. With seeded system can be produce 6 - 6.5 tons of grain, whereas through conventional seedbed system (transplanting) produce 5 to 5.5 tons of grain. The consequences derived from regular spacing will reduce the competition to get the factors of production between plants. The most important issue is that the proper spacing and regularly will cause the Leaf Area Index (LAI) which is optimum for all layers of the laves is perfect so that the process of plant photosynthesis can take place optimally. This condition can support an increase in production was higher in the system of rice cultivation by sowing seeds directly without passing through the nursery. (b). wet seeded causes plants to avoid excessive transpiration process that can lead to withering as lack of water, (c). plants avoid stagnation. (d). avoid plant roots merging process that usually happens when transplanting so many roots are damaged and lost and (e). With wet seeded labor requirement for an area of 1 hectare growers are five workers with a more or less 4 hours so that the cost will be much cheaper (approximately Rp 125,000) when compared with the cultivation of a nursery system.

Balanced fertilization is the provision of fertilizer into the soil to achieve the status of all the essential nutrients balanced as required for optimum plant and increase production and quality results, improving the efficiency of fertilization, soil fertility and avoid environmental pollution. So a balanced fertilizer is impartial fulfillment of nutrient in the soil, not balanced in shape and type of fertilizer. Fertilization is given for the lack of nutrients in the soil, which is sufficient given only to maintain soil nutrient that is not reduced (Kasno, 2010). The concept of Balanced Fertilization in rice cultivation should consider several things, among others: the status of soil nutrient needs of plants, and the target hasil. Berkaitan with balanced fertilization, the current government, especially the Department of Agriculture and the Institute of SOEs have applied enough fertilizer for rice, especially in region of the island of Java as follows: dose that the set is (5: 3: 2) is 500 kg of organic fertilizer Phonska + 300 kg + 200 kg urea per hectare unit. Application carried out 3 times that first applicant is basic fertilizer. Basic fertilizer is embedded fertilizer while after processing before planting the land is sown evenly way 500 kg of organic fertilizer when the land is being returned to an area of 1 hectare , then raked / pengancuran ground. Fertilizing the second when the plant was 14 dap (days after planting) at a dose of 300 kg + 150 kg urea Phonska and applications to 3 of 50 kg urea when the plant approaches grain filling phase.

3. Material and Methods

Research carried out in the field, namely in Subak Tabunan Peninjoan Village, District Tembuku, Bangli regency of Bali province. Prior to the study carried out to analyze the nutrient content of the soil where the research. The experiment was conducted using rice seed Impari 13

with the pattern of Factorial Experiments (RAK factorial). The first factor cropping systems that Transplanting system (TP) and Sow Seeds Direct (TB). The second factor is the application of balanced fertilizers with a package of different applications ie C / Control (Urea: 400; NPK Phonska: 300; POG: 300); P1 (Urea: 200, NPK Phonska: 300; ZA: 100; POG: 300) and P2 (Urea: 400; NPK Phonska: 300; POG: 300). The application of balanced fertilizer with a dose and time of application of of different fertilizer at planting system Transplanting and Sow Seeds Direct (Table 1).

Implementation research Transplanting system starts with nursery / nursery are ready to be moved after the age of 15 days. Land for trial plowed raked up the soil into mud and made 6 large swath as replications / block with the size of each 35m x 6m. Each plot is divided between the plot of 0.5m. Placement of treatment in each replication is done randomly with given code treatments and replications. Planting in the fields at planting system Transplanting done after the age of 15 with 3 seeds seedlings per hole spacing of 25cmx25cm.

Implementation of wet seeded (Sow seeds directly) or ripped seeds were soaked for 24 hours, then drained for 12 hours in the shade. Signs of seeds ready for planting when it has come out seed roots. Seeding is done by hand using tools tick to make grooves and hole spacing 25 cm x 25 cm. Before planting, the soil is prepared in waterlogged / planting hole. After showing the seeds until the age of 19 days, the soil was maintained under water. At the age of 10-30 days, the plant entered a period of growth. The provision of water at regular intervals 2-3 days. After 30 days and so on, the plants can be treated as a system transplanting.

Table 1. The Application of a Balanced Fertilizer With a Dose and Time of Application Different at Planting System.

Basic

Dose Fertilizer (Kg/Ha)	Dose Fertilizer (Kg/Ha)							
	Time of Application (Days after planting)							
	0	**7**	**15**	**20**	**21**	**30**	**35**	**45**
C (Control)								
Urea: 400	-	-	-	120	-	-	160	120
NPK Phonska: 300	-	-	-	120	-	-	180	-
POG: 300	-	-	-	-	-	-	-	-
Package 1 (P1)								
Urea: 200	-	100	-	-	50	-	50	-
NPK Phonska: 300	-	150	-	-	150	-	-	-
ZA: 100	-	-	-	-	100	-	-	-
POG: 300	300	-	-	-	-	-	-	-
Package 2 (P2)								
Urea: 250	-	32	218	-	-	-	-	-
NPK Phonska: 300	-	38	-	-	-	262	-	-
POG: 300	300	-	-	-	-		-	-

Fertilization with organic fertilizer granules (POG Petroganik) performed ath the time of the last soil tillage. Plant maintenance activities include watering, weeding, pest control and fertilization. Watering is done with intermittent in accordance with the stages set. Fertilization is done with a dose with a dose and time of application in accordance with the treatment that is Control, Package 1 and Package 2.

Rice harvested at between 80-110 days after planting, the plants have reached the age criteria stated in the description of the life of these varieties, and 90% of the flage leaf yellowing grain, rice panicle down as prop-filled grains, grains feels loud when pressed. Harvesting is done by cutting the stem below the panicle. The observations made are: 1). Analysis of nutrient content of the soil prior to planting, 2). Growth and production of crops at harvest is high (cm), containing grain percentage (%), 1000 grain weight (g), production per plot (kg), production per hectare (tonnes). The data were compiled parameters in tables and analyzed in accordance with the study design used is RCBD factorial pattern and Least Significant Difference Test Method (LSD Test 5%).

4. Result and Discussion

From the results of the initial analysis of the land where the study (Table 2) it appears that the neutral soil pH, nutrient content Carbon and low total Nitrogen, available Phosphorus and Potassium are available high. From these results Carbon and Nitrogen fertilization is very necessary so that plant growth is not deficient in these elements. This has been done is the preparation and processing of soil before planting with NPK fertilizer as much as 360 kg stater is divided into two phases with an interval of 2 weeks and subsequent fertilization 5 tons of fertilizer applied in two stages with an interval of 3 weeks.

Table 2. Initial Analyzes of The Land Research

Type of analysis *)	Value	Description
pH H_2O	6,8	Neutral
DHL(mmmhos/cm)	0.97	Very low
Organic C (%)	1,96	Low
N Total (%)	0,15	Low
Available P (ppm)	22,99	Medium
Available K (ppm)	300,74	High
Water content		
KU (%)	11,79	-
KL (%)	31,09	-
Texture		
Sand	43,32	
Dust	34,06	
Clay	22,62	
		Clays

*). Soil analysis is done in the Lab. Soil Science Unud

4.1 Effect of Cropping Systems

Results of analysis of variance showed that planting system very significant effect on all parameters observed were plant height, number of tillers / hill, the number of productive tillers, panicle length, 1000 grain weight, yield per plot and production per hectare except in parameter indicates the percentage of grain contains results not significantly different. Plant height at 99.09 cm seeding method was significantly higher than Transplanting 92.71 cm. Tillers per hill at 40.73 seeding systems stem significantly higher than 35.65 only Transplanting stem. The number of productive tillers at 15.57 seeding system stem significantly higher than the 14.25 Transplanting stem (Table 3). From these data it appears that seeding provides better growth than on Transplanting. The observation of 22.14 cm panicle length, percentage of grain containing 88.57%, 1000 grain weight 24.77 grams of dry grain harvest, production per plot of 16.21 kg and 6.48 tons per hectare production at fixed seeding showed a higher yield of transplanting. In seeding significantly increased 10.13% dry weight of 1000 grains harvest and 4.76% per hectare of transplanting system that produces 22.47 g dry weight of 1000 grains harvest GKP and 6.03 tonnes per hectare of dry grain harvest (Table 4).

4.2 Effect of Fertilization

Results of analysis of variance showed that fertilization package very significant effect on all parameters observed that the number of tillers, number of productive tillers, panicle length, percentage of grain contains, 1000 grain weight, yield per plot and production per hectare except plant height parameters showed different results significant (Table 3.4 and 5).

Table 3. Growth Rice Plants in Direct Seeding With Balanced Fertilizer

Treatment	Plant height (cm)	Number of puppies (stalk / clump)	Number of productive tillers (stalk / clump)
	Cropping systems		
Transplanting (TP)	92,71 b	35,65 b	14,25 b
Direct Seeding	99,09 a	40,73 a	15,57 a
LSD 5%	1,54	1,55	0,64
	Balanced fertilizer		
Control (C)	95,81 a	35,66 c	14,56 b
Package 1 (P1)	95,93 a	40,98 a	16,20 a
Package 2 (P2)	95,97 a	37,93 b	13,97 b
LSD 5%	1,89	1,9	0,78
	Combination of cropping systems and fertilizer		
TP C	92,52 b	34,05 d	13,52 d

TP P1	92,87 b	37,44 c	15,29 c
TP P2	92,71 b	35,44 cd	13,92 d
TB C	99,05 a	37,27 c	15,61 b
TB P1	99,00 a	44,52 a	17,10 a
TB P2	99,23 a	40,42 a	14,02 d
LSD 5%	2,68	2,69	1,10

Note: The number are followed by the same letter in the same column indicate no significantly at LSD Test 5%

In the fertilizer package distinction, the highest plant heigh 95.97 cm at 2 different package unreal with high fertilizer plant at 1 and control package. The highest number of tillers in the package 1 is 40.98 rod and significantly different with Package 2 and control rods are 37.93 and 35.66 rods. The highest number of productive tillers on package 1 is 16.20 rod and significantly different with Package 2 and control rods are 13.97 and 14.56 rods (Table 3). From these data it appears that the fertilizer package 1 provide better growth of the package 2 and control.

The observation of the fertilizer package 1 still shows the ultimate outcame than 2 and a control packet is 21.99 cm panicle length, percentage of graon containing 92.70%, 24.85 g 100 grain weight, dry paddy crop production dry grain harvest 6.51 tons per hectare, 2 fertilizer package of dry paddy crop yield per hectare of 5% was significantly higher than the packet 2 and 7.78% significantly higher than the packet 2 and 7.78% significantly higher than the control.

Table 4. Components Rice Product on Direct Seeding with Balanced Fertilizer

Treatment	Length tassel (cm)	Percentage of Grain contains (%)	Weight of 1000 grains (g)
Cropping systems			
Transplating (TP)	18,52 b	87,74 a	22,47 b
Direct Seeding (TB)	22,14 a	88,57 a	24,77 a
LSD 5%	0,84	0,97	0,52
Balanced fertilizer			

Treatment	Length tassel(cm)	Percentage of Grain contains (%)	Wight of 1000 grains (g)
Control (C)	19,15 b	84,47 c	22,81 b
Package 1 (P1)	21,99 a	92,70 a	24,85 a
Package 2 (P2)	19,55 b	87,32 b	23,20 b
LSD 5%	1,03	1,19	
Combination of cropping systems and fertilizer			
TP C	13,35 de	83,86 d	22,22 d
TP P1	19,49 cd	91,62 b	22, 98 cd
TP P2	17,14 e	87,76 c	22,23 d
TB C	19,95 c	85,09 d	23,41 bc
TB P1	24,50 a	93,77 a	26,71 a
TB P2	21,97 b	86,87 c	24,19 b
LSD 5%	1,45	1,68	0,9

Note: The numbers are followed by the same letter in the same column indicate no significantly different at LSD Test 5%

4.3 Effect combination of system planting and fertilization.

Results of analysis of variance showed that there was real until very real interaction between cropping systems and fertilization on the parameter number of productive tillers, panicle length, percentage of grain contains, 1000 grain weight, yield per plot and production per hectare but the parameters of plant height and number of tillers that the interaction is not significant (Table 3.4 and 5).

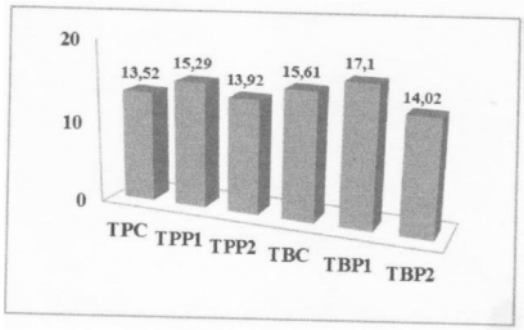

Figure 1. Productive Tillers per Hill (stalk)

Table 5. Dry Weight Harvest Rice of the Direct Seeding with Balanced Fertilizer

Treatment	Production dry grain harvest (Kg / plot)	Production dry grain harvest (tone/ha)
Cropping systems		
Transplanting (TP)	15,06 a	6,03 b
Direct Seeding (TB)	16,21 a	6,48 a
LSD 5%	0,49	0,20
Balanced fertilizer		
Control (C)	15,52 b	6,04 b
Package 1 (P1)	16,28 a	6,51 a
Package 2 (P2)	15,11 b	6,20 b
LSD 5%	1,68	0,24

Treatment	Production dry grain harvest (Kg / plot)	Production dry grain harvest (tone/ha)
Combination of cropping systems and fertilizer		
TP C	14,93 c	5,97 c
TP P1	15,27 bc	6,10 c
TP P2	14,99 c	5,99 c
TB C	15,29 bc	6,11 bc
TB P1	17,29 a	6,91 a
TB P2	16,05 b	6,42 b
LSD 5%	0,85	0,34

Note: The numbers are followed by the same letter in the same Column indicate no significantly different at LSD Test 5%

Planting system seeding fertilizer package 2 provides real plant height 99.23 cm highest and lowest on Transplanting with fertilizer control system is 92.52 cm. planting system seeding fertilizer package 1 provides real number of tillers per hill highest and the lowest at 44.52 rod control system is 34.05 Transplanting stem (Table 3). Planting system seeding fertilizer package 1 provides the number of productive tillers per hill real highest and the lowest at 17.10 rod control system is 13.52 Transplanting stem. Number of tilers and number of productive tillers per hill at seeding system with three packets of fertilizer continued to show the real number I higher than the third package system Transplanting with fertilizer (Table 3).

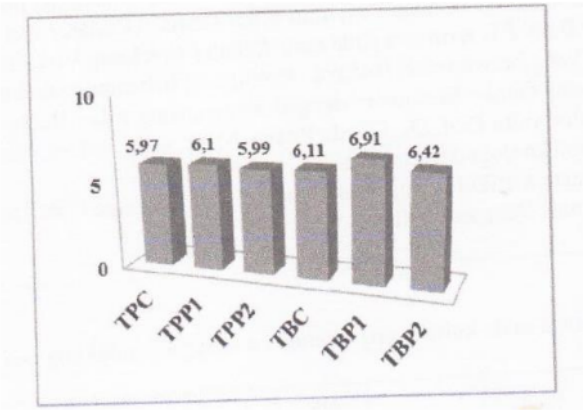

Figure 2. Dry Grain Harvest (tone/ha)

Conclusion

1. System sow seeds directly provide results that dry grain harvest 7.46% was significantly higher than the system Transplanting
2. Fertilization package 1 (Urea: 200, NPK Phonska: 300, ZA: 10, POG: 300) gives the result that the highest real dry grain harvest compared package 2 (Urea: 25, NPK Phonska: 300, POG: 300) and control (Urea: 400, NPK Phonska: 300, POG: 300)
3. System Sow seeds directly to the fertilizer package 1 (Urea: 200, NPK Phonska: 300, ZA: 100, POG: 300) gives results that dry grain harvest real highest of 6.91 tonnes / ha

Acknowledgement

Through this article the authors present the award team and thanks o (1) the Director General of Higher Education c/q DP2M and Sub Director of Research Director for the trust and the opportunity given (2) Rector Unmas Denpasar who have given permission to carry out reserch activities (3) Chairman SBRC Unmas and Dean of Faculty of Agriculture Un,as for their guidance and assistance for smooth research (4) All members of the team for all the participation and cooperation of research implementation.

References

Bastomi, Yazid. 2011. Extreme Weather Planting seeding, Who's Afraid !. Retrivied

frhttp://pertanian.jombangkab.go.id/berita-dinas/tips-inova/142-cuaca-ekxtrem-tanam-tabela-siapa-takut_on_January_2013

Kasno, A 2010. Balanced Fertilizer Specific Location For Corn. Retrivied from

http://pustaka.litbang.deptan.go.i/bppi/lengkap/bpp10013.pdf_on_January_2013

Malik, Harno. 2012. Understanding seeding Planting System. Retrivied from

http://harmo-blog.blogspot.com/2012/05/pengertian-sistem-tanam-atbela.html_on_January_2014

Mulyani, Sutedjo. 2012. Fertilizers and Fertilization Method. Reinika Copyright

Pitojo, Setijo. 2003. Planting Rice seeding. Jakarta: Penebar Organization

I Gusti Ngurah Adi. 2012. Application of seeding Planting Systems, SRI, and

Against Hybrid Rice Yield Components and new varieties. Retrivied from http://digilid.polije.ac.id_on_January_2013

Editorial Galang Kangin. 2012. Toward Self-Sufficiency seeding. Retrivied from

http://etabloidgalangkangin.blogspot.com/2012/04/tabelamenuju-swasembada-edisi-iv2012.html_on_January_2013

Soemartono, et al. 1982. The rice plant. CV. Yasaguna

Subroto, H. and A. Yusrini. 2005. Soil Fertility and Utilization, Jakarta: Bayumedia Publishing

Suprayono amd Setyono Agus, 1997. Overcoming Problems Rice Cultivation.

Jakarta: Penebar Oganization.

Susilo, Adhi. 2012. Planting Seeds Direct (seeding). Retrivied from http://bpppkwonotunggal.blogspot.com?2012/03/v-behavior.url.defaultvmlo25.html_on_January_2013

Winarso, S. 2005. Soil Fertility: Basics of Health and Quality of Soil. Yogyakarta: Gava Media

Effectiveness of Direct Seed Sowing System and Balanced Fertilizer on Rice Productivity

ORIGINALITY REPORT

9%	8%	4%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	media.neliti.com Internet Source	3%
2	Submitted to Institut Pertanian Bogor Student Paper	2%
3	S. Pandiangan, S.T. Trina, S. Saragih. " Response of rice (L.) on seedling age and number of seedlings per planting hole ", IOP Conference Series: Materials Science and Engineering, 2018 Publication	1%
4	carano.pustaka.unand.ac.id Internet Source	1%
5	akademik.unsoed.ac.id Internet Source	1%
6	R Budiono, P G Adinurani, P Soni. "Effect of new NPK fertilizer on lowland rice (Oryza sativa L.) growth", IOP Conference Series: Earth and Environmental Science, 2019 Publication	1%

7	eprints.triatmamulya.ac.id Internet Source	1 %
8	krishikosh.egranth.ac.in Internet Source	<1 %

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		