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Yield of the Mutant (M6) Short Stem of Mentik Wangi Rice Varieties Resulting from Gamma Ray Irradiation 300 Gray

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Abstract
Mentik Wangi is one of Indonesia's most popular rice germplasm sources due to its delicate, fluffy texture and arom aroma. Farmers switch to better varieties with high yields due to field challenges in cultivating fragrant rice. The plants are quite tall, harvest time is long, and yield is low; therefore farmers switch to superior varieties with high yields. The purpose of this research was to obtain information on how much yield of 14 mutant rice lines produce and to find mutant lines with short stems and high yields that could be developed to new varieties. The research was conducted at the Tegalgondo Rice Seed Garden Agricultural Land between June to October 2020. This study used a Completely Randomized Block Design (CRBD) with a single factor. Each treatment was repeated three times. The data obtained analyzed with analysis of variance and followed with Duncan Multiple Range Test at 5% level if any significant influences were obtained. The results of this research showed that 14 Mentik Wangi rice lines yields were ranging from 6.70 to 8.21 tons ha-1.Stems from 9 lines with high yields were M6-MW3-G10-14-2, M6-MW3- G12-1-17, M6-MW3-G5-21-3, M6-MW3-G5-21-14, M6-MW3-G6-17-14-4, M5-MW3-G6-20-9-16, M6-MW3-G1-1-2 M5-MW3-G1-5-47, M6-MW3-G6-10-9-26. These lines were potential candidates for new high-yielding varieties, which would then considered to be evaluated for higher yields or multilocation tests before becoming an official new varieties.

Keywords: mentik wangi; mutations; short stem; yield potential;

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Introduction

Rice (*Oryza sativa* L.) is an important food commodity in developing countries and is the staple food for the majority of the population in Indonesia. Production of rice (1) needs to be improved in the future to meet the growing demand. This encourages efforts to increase rice yields, especially in local varieties. Local varieties were chosen because they can adapt well to various ecosystems and biotic and abiotic stresses from the local area. (2) in addition, local varieties have high quality such as fluffier and delicious rice taste.

Rice germplasm of local varieties in Indonesia are spread in various regions, one of which is the local variety Mentik Wangi from Magelang, Central Java. According to (3), market and consumers are very receptive to this Mentik Wangi rice, because the seeds are elliptical in shape and have a distinctive fragrant aroma, aside from the fact that they are also resistant to diseases. Mentik Wangi also has drawbacks in cultivation because it has high stems reaching 145 cm; another weakness lies in the harvest age which reaches about 4 months exceeding the average harvest age of about 3 months, and low yields. around 4-5 ton ha^{-1} (4).

As a result, Mentik Wangi is becoming increasingly rare because farmers switch to superior varieties that have higher yields. The plant breeding method was chosen as a breakthrough which is expected to improve genetic traits. In order to achieve the goal of rice plant breeding (5) one of the most important traits is increasing yields that can be passed on to the next generations. Mutation using gamma rays have been selected for the ability to penetrate tissues of living beings of high energy that causes changes in the chromosomes of plants by means of displacement or loss of chromosomes in a specific section (6).

Mutations that occur are expected to produce rice mutants that have short stems and high yields through a selection process. High yields are one of the efforts to increase national rice production through the formation of superior varieties. Research on yield testing aims to determine the production potential of several plant varieties, both with the same environmental conditions or with different conditions (7). The aim of this study was to obtain information on the yield of 14 mutant lines and to obtain mutant lines with short stems and high yields to be developed as new varieties.

Material and Methods

The research was carried out in the Kebun Benih Padi Tegalgondo Sraten Village, Gatak District, Sukoharjo Regency from June to October 2020. The tools and include hoes, tractors, roller materials used meters, rulers, sickles, scissors, sacks, stationery, analytical scales, pot trays, stakes, rice pads, label boards, raffia, plastic, envelopes, and cameras. Urea fertilizer , NPK, Ladu soil, Marshall Insecticide, Pesticide, Mentik Wangi (M5) rice seed produced by gamma ray radiation of 300 gray as many as 14 lines.

This study used a Completely Randomized Block Design (CRBD) with a single factor, namely strain which consisted of 14 lines namely M5-MW2-G12-1-14, M5-MW2-G12-1-17, M5- MW2-G5-21-3, M5-MW2-G5-21-14, M5-MW2-G6-19-8-1, M5-MW2-G5-17-14-4, M5-MW2-G10-14-2, M5-MW2-G6-20-9-15, M5-MW2-G6-20-9-16, M5-MW2-G1-1-2, M5-MW2-G1-5-47, M5-MW2-G1-5-52, M5-MW2- G1-5-62, M5-MW2-G6-10-9-26. Each line planted contained 30 plants and repeated 3 times.

The stages of this research include seed nursery, land preparation and processing, planting, maintenance, harvesting, post-harvest, yield testing. The variables observed included plant height, total tiller number, number of productive tillers, flowering age, 80% flowering age, harvest age, panicle length, number of panicle seeds, panicle density index, weight of 100 seeds weight, seed weight of clusters, productivity. Data were analyzed using ANOVA 5%. If the analyzed data showed a significant difference, then it was further tested with DMRT 5%.

Results and Discussion

General condition of research site

The experimental land is in the Tegalgondo Rice Seed Garden located in Sraten Village. This village has a regosol soil type which has physical properties in the form of coarse grains, the pores are quite large, so it is porous. This is in accordance with the statement of (8) that regosol soil has several problems such as the ability to absorb and store water which is very low and sensitive to nutrient leaching.

Table 1. Rainy Days and Rainfall Data for Sukoharjo Regency

No	Month	Many Rainy Days (Days)	Rainfall (mm)
		2020	2020
1	January	21	436
2	February	15	324
3	March	17	338
4	April	9	141
5	May	30	340
6	June	8	1
7	July	0	0
8	August	0	0
9	September	6	22
10	October	11	64
11	November	21	436
12	December	17	283
Amount		107	1643

Source: Department of Agriculture and Fisheries of Sukoharjo Regency.

Pests and Diseases

The main pests in rice research are sparrows (*Lonchura leucogastroides*) seed-eating birds that actively attack the milk maturation phase until the formation of seeds. (9) mentioned that due to the attack of sparrows, rice production decreased by 30-50%. The control method is carried out mechanically by driving away birds that are around the plant or that perch on the stakes of the rice lines. The golden snail (Pomacea canikulata L.) attacks rice plants during nursery until the plants have been transferred to the fields. (10) stated that the most severe attacks usually occur when the plant is 1-7 days after transplanting until the plant is approximately 30 days old. To control it mechanically is by removing them from the plants or if it has caused a heavy attack can be controlled by giving snail down.

The brown planthopper (*Nilaparvata lugens*), attacks every growing season, besides being able to reduce rice yields, it can also be a vector of viruses, such as grass dwarf and hollow dwarf. In accordance with the statement of (11) that brown planthopper attacks reduce rice production, both qualitatively and quantitatively. Chemical control is carried out by spraying plenum or tencu.

Observed Variable

Plant height

Plant height is the most easily measured and observed appearance of a plant character. The increase in plant height by (12) is the result of increased cell division due to increased assimilation. The results of Duncan's multiple range test (Table 2) on the character of plant height there were significant differences in the tested lines.

Tabel 2. Plant height of Mentik Wangi Rice as a result

Strain	Plant height
M6-MW3-G10-14-2	116.60 ab
M6-MW3-G12-1-14	118.53 bc
M6-MW3-G12-1-17	116.27 abc
M6-MW3-G5-21-3	117.93 abc
M6-MW3-G5-21-14	117.40 abc
M6-MW3-G6-19-8-1	117.73 abc
M6-MW3-G5-17-14-4	113.27 ab
M6-MW3-G6-20-9-15	119.73 c
M6-MW3-G6-20-9-16	116.73 abc
M6-MW3-G1-1-2	119.00 c
M6-MW3-G1-5-47	117,00 abc
M6-MW3-G1-5-52	112.40 a
M6-MW3-G1-5-62	120.27 c
M6-MW3-G6-10-9-26	116.40 abc

Note: Numbers followed by the same letter indicate that they are not significantly different in Duncan's test (DMRT level 5%).

The control plant height in the fifth generation (M5) was 139.80 cm. This indicated that the 300 Gy gamma ray irradiation on the mutant rice seeds had mutations in the genes controlling plant height. The dwarf phenotype (13) is beneficial for rice fall, but if the plant is too short, it will cause insufficient growth and ultimately affect the potential yield of rice. Selected lines based on plant height characters were M6-MW3-G10-14-2, M6-MW3-G12-1-17, M6-MW3-G5-21-3, M6-MW3-G5-21-14 , M 6- MW3-G6-19-8-1, M6-MW3-G5-17-14-4, M5- MW3-G6-20-9-16, M5-MW3-G1-5-47, M6- MW3- G1-5-52, M6-MW3-G6-10-9-26.

Total of Tillers

Rice plant growth are indicated by the development and increase in the number of tillers. The ability of rice to form total tillers according to (14) is influenced by the availability of nutrients and the ability of plants to produce tillers or genetic factors of the plant. The results of Duncan's multiple spacing test (Table 3) on the total number of tillers showed that there was no significant difference between the tested strains.

Productive Tillers

The results of Duncan's multiple spacing test (Table 3) on the character of the number of productive tillers there were significant differences in the tested lines. The average number of productive tillers of control plants in the fifth generation (M5) was 9.40, which means the number of productive tillers of all mutant lines were higher than of control plants.

The number of productive tillers of the mutant lines ranged from 16 to 22, the number of productive tillers was less than the total tillers. According to (15) rice plants during the generative period are expected to concentrate photosynthetic results on panicle emergence and grain filling. The selected lines based on the number of productive tillers were M6-MW3-G10-14-2, M6-MW3-G12-1-4, M6- MW3-G12-1-17, M6-MW3-G5-21-14, M6- MW3-G5-17-14-4, M5-MW3-G6-20-9-15, M5-MW3-G6-20-9-16, M6-MW3-G1-1-2, M5- MW3- G1-5-47, M6-MW3-G6-10-9-26, M6- MW3-G6-10-9-26.

Flowering Age

The results of Duncan's multiple range test (Table 2) on the 80% flowering character, only the M6-MW3-G6-10-9-26 line showed significantly different results from all the tested lines. The average flowering age of control plants

Table 3 Total Tillers, Productive Tillers, Flowering Age, and Harvest Age of Mentik Wangi Rice as a result of 300 Gy gamma ray irradiation

Strain	Total Tillers	Productive Tillers	Flowering Age		Harvest Age
			Beginning	80%	
M6-MW3-G10-14-2	36.20 a	22.33 b	64.67 bc	68.33 b	99.33 b
M6-MW3-G12-1-14	30.40 a	19.00 ab	63.00 b	68.00 b	99.00 b
M6-MW3-G12-1-17	27.53 a	18.00 ab	64.67 bc	68.33 b	99.33 b
M6-MW3-G5-21-3	26.20 a	16.00 a	64.00 bc	67.67 b	98.67 b
M6-MW3-G5-21-14	25.00 a	18.67 ab	63.33 b	67.33 b	98.33 b
M6-MW3-G6-19-8-1	32.87 a	16.67 a	63.67 bc	67.67 b	98.67 b
M6-MW3-G5-17-14-4	25.27 a	18.00 ab	64.00 bc	68.00 b	99.00 b
M6-MW3-G6-20-9-15	24.47 a	17.33 ab	63.67 bc	67.67 b	98.67 b
M6-MW3-G6-20-9-16	29.40 a	18.33 ab	63.33 b	68.00 b	99.00 b
M6-MW3-G1-1-2	31.73 a	18.33 ab	64.00 bc	68.33 b	99.33 b
M6-MW3-G1-5-47	26.07 a	17.33 ab	63.67 bc	67.00 b	98.00 b
M6-MW3-G1-5-52	27.53 a	17.00 a	65.33 c	68.00 b	99.00 b
M6-MW3-G1-5-62	32, 47 a	21.00 ab	63.67 bc	67.00 b	98.00 b
M6-MW3-G6-10-9-26	30, 73 a	19.33 ab	61.00 a	64.33 a	95.33 a

Notes: Numbers followed by the same letter indicate that they are not significantly different in Duncan's test (DMRT level 5%).

in the fifth generation (M5) was 78 DAP, while the flowering age of the mutant lines ranged from 63-68 DAP. This shows that gamma ray irradiation of 300 Gy on mutant rice seeds can reduce the flowering age of rice plants, so that it can also reduce the harvest age. In accordance with the statement of (16) that the specific target mutants are mutants that have earlier age than the original plant. Rice plants with early maturity are expected by farmers to calculate the next planting period.

Harvest Age

The results of Duncan's multiple range test (Table 3) on the harvest age character of the M6- MW3-G6-10-9-26 line had the shortest harvest life compared to other tested lines. According to (17), that early age is one of the desirable traits in the formation of superior varieties of rice.

The average harvesting age of mutant plants were ranged from 95-99 DAP, while control plants in the fifth generation (M5) were 123 DAP. All mutant plant strains have an early harvest age, according to (18) that the effect of giving the right dose of gamma rays in agriculture will result in plants that have properties such as high yields, short life and disease resistance.

Panicle Length

Panicle is a collection of rice flowers that come out of the book as well as one of the main determinants for all rice crop yields. According to (19) that the potential yield of rice plants is determined by one of the main characters, namely the rice panicle architecture. The results of Duncan's multiple spacing test (Table 4) on the panicle length characters there were significant differences in the tested lines. The average panicle length of control plants in the fifth generation (M5) was 24.338 cm. The average panicle length of the M6-MW3-G12-1-17 strain had significantly different results against the whole mutant strain cells of 27.82. The panicle length which is classified as long is expected to have a low percentage of empty grain and a lot of filled grain, so that it has a good effect on increasing yields.

The panicle length is largely influenced by the external environment. (13) panicle length is susceptible to environmental conditions, the higher the temperature, the shorter the duration of the grain filling period and the faster the grain filling rate. The selected lines based on panicle length characters included lines M6-MW3-G10-14-2, M6-MW3-G12-1-17, M6- MW3-G5-21-3, M6- MW3-G5-21-14, M6 - MW3-G5-17-14-4, M5- MW3-G6-20-9-15, M5- MW3-G6-20-9-16, M6- MW3-G1-1-2, M5- MW3-G1 -5-47, M5-MW3- G1-5-52,M6-MW3- G6-10-9-26.

Total of seeds per panicle

The results of Duncan's multiple range test (Table 4) on the character of the number of seeds per panicle showed that there were significant differences in the tested lines. The average number of seeds per panicle of control plants in the fifth generation (M5) was 133.4. The M6-MW3-G10-14-2 strain had significantly different results against all mutant lines which was of 182.82. The number of seeds per panicle in the mutant line was influenced by productive tillers that produced a lot of panicles the more productive tillers per unit area, the higher the number of seeds per panicle. This is in line with the statement of (20) that the ideal rice plant is to have long and dense panicles, where the amount of grain is large. The selected lines based on the number of seeds per panicle were M6-MW3-G10-14-2, M6-MW3-G12-1-17, M6-MW3-G5-21-3, M6-MW3-G5-21-14, M6-MW3-G5-17-14-4, M5-MW3-G6-20-9-15, M5-MW3-G6-20-9-16, M6-MW3-G1-1-2, M5-MW3-G1-5- 52, M 6-MW3-G6-10-9-26.

Panicle Density Index

The panicle density index is also one of the factors that affect the yield of rice production. The panicle density index was determined by the total grain per panicle and the panicle length. The results of Duncan's multiple range test (Table 4) on the panicle density index characters showed that there were significant differences in the tested strains.

The average panicle index of control plants in the fifth generation (M5) was 5.47, while the M6- MW3-G10-14-2 line had the highest panicle density index value of 6.71. According to a statement of (21) increasingly high number of grain total and panicle length affects the heaviness index panicles. The selected lines based on panicle density index characters were M6-MW3-G10-14-2, M6-MW3-G12-1-17, M6- MW3-G5-21-3, M6-MW3-G5-21-14, M6- MW3-G6-19-8-1, M6-MW3-G5-17-14-4, M6- MW3-G6-20-9-15, M6-MW3-G6-20-9-16, M6- MW3-G1-5-47, M6-MW3-G1-5-52, M6-MW3- G6-10-9-26.

Table 4. Average Panicle Length , Total of seeds per panicle, Panicle Density Index, Weight of 100 Seeds, Seed

Strain	Panicle Length	Total Seeds per panicle	Panicle Density Index	Weight of 100 Seeds	Seed Weight Per Clump
M6-MW3-G10-14-2	27.22 ab	182.82 b	6.71 b	3.75 c	80.47 b
M6-MW3-G12-1-14	25.64 a	159.90 a	6.24 a	3.73 bc	68.46 ab
M6-MW3-G12-1-17	27.82 b	176.22 ab	6.33 ab	3.67 abc	72.51 ab
M6-MW3-G5-21-3	25.77 ab	163.67 ab	6.35 ab	3.69 abc	65.14 a
M6-MW3-G5-21-14	27.06 ab	173.73 ab	6.42 ab	3.52 a	69.36 ab
M6-MW3-G6-19-8-1	25.23 a	159.27 a	6.31 ab	3.51 a	65.07 a
M6-MW3-G5-17-14-4	26.65 ab	172.56 ab	6.47 ab	3.55 ab	67.47 a
M6-MW3-G6-20-9-15	26.37 ab	167.43 ab	6.33 ab	3.67 abc	67.93 a
M6-MW3-G6-20-9-16	25.97 ab	168.58 ab	6.50 ab	3.60 abc	72.56 ab
M6-MW3-G1-1-2	27.17 ab	168.93 ab	6.22 a	3.60 abc	64.98 a
M6-MW3-G1-5-47	26.68 ab	171.40 a	6.42 ab	3.53 ab	66.02 a
M6-MW3-G1-5-52	26.00 ab	165.87 ab	6.38 ab	3.54 ab	64.22 a
M6-MW3-G1-5-62	25.53 a	157.58 a	6.17 a	3.52 a	71.20 ab
M6-MW3-G6-10-9-26	25.94 ab	171.00 ab	6.60 ab	3.67 abc	64.79 a

Notes : Numbers followed by the same letter indicate that they are not significantly different in Duncan's test (DMRT level 5%).

Weight 100 seeds

The results of Duncan's multiple range test plants. (22) menationde that seed size can vary (Table 4) on the weight of 100 seeds showed a significant differences among the tested strains. The average weight of 100 seeds of control plants in the fifth generation (M5) was 1.91 grams. The M6-MW3-G10-14-2 line had the highest 100 seed weight compared to the other tested lines. Mutations treated with 300 Gy gamma ray irradiation were considered quite effective in characterizing the weight of 100 rice seeds. In accordance with the statement of (23) that the gamma ray irradiation gave positive results which resulted in a weight of 100 seeds better than control from one plant to another, between varieties of the same crop and even from year to year or from field to field with the same variation. The selected lines based on the weight of 100 seeds were M6-MW3-G10-14-2, M6-MW3- G12-1-14, M6-MW3-G12-1-17, M6-MW3- G5-21-3, M5-MW3-G6-20-9-15 , M5-MW3- G6-20-9-16, M6-MW3-G1-1-2, M6-MW3- G6-10-9-26.

Seed weight per clump

Seed weight per clump is the result of the total weight of seeds per plant obtained and the dry matter contained in the seeds. According to (24) the dry matter in the seeds is obtained from the results of photosynthesis which can then be used for filling seeds

The results of Duncan's multiple range test (Table 4) on the character of seed weight per clump showed that there were significantly different results in the tested lines. The average weight of 100 seeds of control plants in the fifth generation (M5) gene was 23.08 grams. The M6-MW3-G10-14-2 line had the highest seed weight per clump and had a significantly different value than the other tested lines of 80.47 grams. The results of gamma ray irradiation of 300 Gy given to the Metik wangi rice seeds affected the photosynthetic process of mutant plants so that the photosynthate produced was also maximal. This is in accordance with the statement of (25) that the dry weight of grain can indicate the high and low productivity of the plant. The selected lines based on the character of seed weight per clump included lines M6-MW3-G10-14-2, M6-MW3-G12-1-14, M6-MW3-G12-1-17 , M 6-MW3-G5-21- 14, M5-MW3-G6-20-9-16,M6-MW3-G1-5-62 .

Productivity

Productivity is the yield of one plant line expressed in tons ha^{-1}. The amount of rice yield per hectare is determined by the production component. Among these components were the number of seeds per panicle, the number of panicles per clump, the weight of 1000 seeds and the percentage of grain content.

Table 5. Average Productivity of Mentik Wangi Rice from 300 Gy gamma ray irradiation

Strain	Productivity (ton ha^{-1})
M6-MW3-G10-14-2	8.21 b
M6-MW3-G12-1-14	7.41 ab
M6-MW3-G12-1-17	7.51 ab
M6-MW3-G5-21-3	6.98 ab
M6-MW3-G5-21-14	6.70 a
M6-MW3-G6-19-8-1	7.63 ab
M6-MW3-G5-17-14-4	6.67 a
M6-MW3-G6-20-9-15	7.39 ab
M6-MW3-G6-20-9-16	6.67 a
M6-MW3-G1-1-2	6.83 a
M6-MW3-G1-5-47	7.43 ab
M6-MW3-G1-5-52	6.69 a
M6-MW3-G1-5-62	7.35 ab
M6-MW3-G6-10-9-26	7.18 ab

Notes: Numbers followed by the same letter show no significant difference in Duncan's test (DMRT level 5%).

The results of Duncan's multiple range test (Table 5) on the productivity character showed significantly different results in some of the tested lines. The average productivity of control plants in the fifth generation (M5) was 3.78 tons ha $^{-1}$. The M6-MW3-G10-14-2 line showed significantly different results from the other tested lines and had the highest productivity of 8.21 tons ha^{-1} . Plant productivity is influenced by the genetics of each line. In accordance with the statement of (26) the results of each strain tested were different because they were influenced by the plant's ability to tolerate the environment during the growth period. The selected lines based on the productivity characteristics per hectare were M6-MW3-G10-14-2, M6-MW3- G12-1-14, M6-MW3-G12-1-17, M6- MW3-G5-21-3, M6-MW3-G5-19-8-1, M5- MW3-G6-20-9-15, M6-MW3-G1-5-47, M6-MW3-G1-5-62, M6-MW3-G6-10-9-26.

Selected lines as candidates for superior varieties

Success in plant breeding through mutation induction certainly cannot be separated from the selection process. Selection is based on improving the required traits of the obtained mutant lines. In this study, the nature of short stems and high productivity of the mutant rice lines produced by gamma ray irradiation process. Selection of rice mutant lines is expected to obtain the desired mutant genotype.

Table 6. Expected lines of Mentik Wangi Rice M6 Result of 300 Gy Gamma Ray Irradiation

Strain	Plant height (cm)	Seed weight per clump (grams)	Productivity (ton ha^{-1})
M6-MW3-G10-14-2	116.60	80.47	8.21
M6-MW3-G12-1-17	116.27	72.51	7.51
M6-MW3-G5-21-3	117.93	65.14	6.98
M6-MW3-G5-21-14	117.40	69.36	6.70
M6-MW3-G5-17-14-4	113.27	67.47	6.67
M6-MW3-G6-20-9-16	116.73	72.56	6.67
M6-MW3-G1-1-2	119.00	64.98	6.83
M6-MW3-G1-5-47	117,00	66.02	7.43
M6-MW3-G6-10-9-26	116.40	64.79	7.18
Control(*)	139.80	23.08	3.78

Notes : The sign (*) represents Control (M6) planted at different planting seasons, namely November 2018 to April 2019.

(27) mentioned that inter-variant, in terms of yield and quality of the edible portion; ease of cultivation, harvesting, and processing; tolerance to environmental stresses; and resistance to pests. Tabel 5. showed that there are nine strains pitch select, namely strain M6-MW3-G10-14-2, M6- MW3-G12-1-17, M6-MW3-G5-21-3, M6- MW3-G21 -14, M6-MW3-G17-14-4, M6- MW3-G6-20-9-16, M6-MW3-G1-1-2, M6-MW3-G1-5-47, M6-MW3-G6-10-9-26. These lines are expected to be used as new promising lines for further multi-location testing and released as new varieties.

Conclusions

Based on the results of the research on M6 Short Stem Mutant Yield Rice Varieties of Mentik Wangi from 300 Gy Gamma Ray Irradiation, it can be concluded that:

1. A total of 14 rice lines of the Mentik Wangi variety were tested and produced different yields for each line and were classified as high, ranging from 6.70 to 8.21 tons ha^{-1}.
2. Based on the characters of short stems and high yields, there were 9 potential lines, including M6-MW3-G10-14-2, M6-MW3-G12-1-17, M6-MW3-G5-21-3, M6. -MW3-G5-21-14, M6-MW3-G6-17-14-4, M5-MW3-G6-20-9-16, M6-MW3- G1-1-2 M5-MW3-G1-5- 47, M6-MW3-G6-10-9-26 and can be used as a source of new diversity to be further tested for continued yield or multilocation tests and released as new varieties.

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