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# Plasma Nutfah

Volume III Nomor 1 Tahun 1998



**Komisi Nasional Plasma Nutfah**
**Departemen Pertanian**

# *Plasma Nutfah*

Volume III Nomor 1 Tahun 1998



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## Pengantar

Sebagai salah satu publikasi ilmiah yang relatif baru, *Plasma Nutfah* terasa masih memiliki kekurangan, baik dari segi *content* dan *performance* maupun frekuensi terbit. Menyadari akan hal itu, redaksi *Plasma Nutfah* senantiasa berupaya melakukan perbaikan di sana sini.

Kontinuitas terbit publikasi ini tergantung kepada partisipasi para peneliti mengirimkan naskahnya ke redaksi. Sementara itu, kualifikasi *Plasma Nutfah* berkaitan erat dengan kualitas naskah yang dimuat di dalamnya. Oleh karena itu, untuk dapat terbit secara teratur dengan materi yang semakin berbobot maka publikasi ini tentu memerlukan perhatian yang lebih besar dari semua unsur terkait, termasuk penyumbang naskah. *Panduan Penulisan Makalah* yang disajikan di halaman paling akhir *Plasma Nutfah* seyogianya perlu diacu dalam penulisan naskah yang akan dikirimkan ke redaksi.

Dalam nomor ini, *Plasma Nutfah* terbit dengan delapan naskah. Beberapa naskah lainnya yang telah masuk ke redaksi akan diterbitkan dalam nomor berikutnya, tergantung pada kelayakan terbitnya. Naskah yang lain tetap ditunggu redaksi untuk diterbikan di media publikasi ini. Terima kasih.

Dewan Redaksi

***Plasma Nutfah* diterbitkan oleh Komisi Nasional Plasma Nutfah, Departemen Pertanian. Memuat hasil penelitian dan tinjauan ilmiah tentang eksplorasi, karakterisasi, evaluasi, pemanfaatan, dan pelestarian plasma nutfah tumbuhan, hewan, dan mikroba, buletin ini diterbitkan secara berkala, dua kali setahun.**

## Daftar Isi



**Komisi Nasional Plasma Nutfah**
**Departemen Pertanian**

F30

# Characteristics of Some Qualitative and Quantitative Traits on Soybean Germplasm Collection

**Yayuk Aneka Bety**

*Balai Penelitian Kacang-kacangan dan Umbi-umbian*

## ABSTRAK

**Karakteristik Sifat Kualitatif dan Kuantitatif Koleksi Plasma Nutfah Kedelai.** Karakterisasi dan rejuvinasi genotipe kedelai koleksi plasma nutfah dimaksudkan untuk mengetahui dan meluruskan identitas genotipe apabila terjadi penyimpangan dan melakukan pembaharuan benih. Penelitian mencakup 115 genotipe kedelai dari koleksi plasma nutfah Balitkabi (Balai Penelitian Kacang-kacangan dan Umbi-umbian), dilaksanakan di Inlitkabi Kendalpayak pada MK 1995. Tiap genotipe ditanam 1 baris panjang 5 m dengan jarak tanam 10 cm dalam baris dan 80 cm antarbaris, 1 tanaman/rumpun, tanpa ulangan. Tanaman dipupuk dengan 50 kg urea, 75 kg TSP dan 75 kg KCl/ha pada waktu tanam. Hasil penelitian menunjukkan, untuk sifat kualitatif semua genotipe yang diuji bertipe tumbuh determinate, 87% mempunyai hipokotil berwarna ungu dan 13% berwarna hijau, 90% memiliki warna bunga ungu dan yang lainnya berwarna putih. Warna biji bervariasi dari kuning, hijau, hitam hingga campuran kuning dan hijau. Warna polong masak didominasi oleh warna coklat dan sisanya kuning. Sebanyak 61% genotipe yang memiliki umur masak antara genjah dan sedang berkisar antara 76-93 hari dengan rata-rata 84 hari. Umur berbunga berkisar 37-53 hari dengan rata-rata 46 hari. Tinggi tanaman cukup beragam, 27,4-70,8 cm dengan rata-rata 46,7 cm. Ukuran biji umumnya kecil dengan berat 100 biji 4,5-12,4 g, rata-rata 6,8 g. Potensi hasil genotipe yang diuji cukup beragam, 7,6-20,5 g dengan rata-rata 7,6 g/tanaman. Dari evaluasi baku dapat disimpulkan bahwa contoh genotipe kedelai dari koleksi plasma nutfah Balitkabi masih memiliki karakteristik yang tidak berubah, dan berpotensi sebagai bahan pembentukan varietas unggul kedelai umur genjah, tanaman pendek, dan ukuran biji kecil hingga sedang.

Kata kunci : Kedelai, karakterisasi, rejuvinasi, koleksi plasma nutfah

## ABSTRACT

**Characteristics of Some Qualitative and Quantitative Traits on Soybean Germplasm Collection.** Characterization and rejuvination was aimed to identify the new collection and to recharacterized the old collection, and to produce new seed. Soybean seed of 115 genotypes were taken from RILET (Riset Institute of Legume and Tuber Crops) germplasm collection. The experiment was carried out in Kendalpayak sub station during dry season of 1995. Each line was planted at a 5 m row with planting distance of 10 cm in the row and 80 cm between rows, 1 plant/hole. The plants were fertilized with 50 kg/ha of urea, 75 kg/ha of TSP, and 75 kg/ha of Kcl as basal fertilization. Result of the experiment showed that all lines werre determine, 87% had purple hypocotyl and 13% green hypocotyl, 90% had purple flower and 10% white flower. Seed color varied from yellow, green, black, and yellowish green. The color of matured pods was mostly brown and the rest was yellow. Sixty one percent of lines were early and moderate maturing lines with the days to maturity and flowering ranging from 76 to 93 days (average 84 days) and 37 to 53 days (average 46 days) respectively. Plant height ranging from 27.4-71.8 cm with average of 46.7 cm. The lines tested mostly had small seed size with 100 seed weight ranging from 4.5 to 12.4 g (average 6.8 g). The seed weight per plant ranging from 7.6 to 20.5 g (average 7.6 g/plant). We concluded that characteristic of soybean lines of RILET germplasm collection did not change and it was suitable as gene sources of short maturity, short plant, and small to intermediate seed size.

Key words : Soybean, characterization, rejuvination, germplasm collection.

## INTRODUCTION

Identification of some soybean genotypes of RILET germplasm collection was carried out upon qualitative and quantitative traits. The qualitative traits such as plant type, flower color, hypocotyl color, and seed color were very important as identifying mark of a genotype. According to IBPBR (1983), the basic identifying mark of soybean genotypes were plant type, flower color, and seed color.

Characterization might be carried out by means of in situ and ex situ characterization. In situ was aimed to counter the environment effect in order germplasm in time with the changing environment (Valkoun and Damaina, 1994) and considered less expensive (Bush, 1991). Ex situ conservation, however, is very common to be used yet, it need simpler facility and equipment. Lately, biotechnology are becoming popular to practise by using RAPD markers (Jianhua *et al.*, 1996) and RFLP methods (Kawase, 1994).

Characterization was mostly stressed on the new collection, however, as many old genotypes loss their viability and the discription was deviated from the previous characters, the activity then was more focussed on tracing the genetic identity of those genotypes. Incorrect discription, might resulted from improper handling, natural crossing, and mutation, was easily distinguished based on the qualitative traits where less affected by environment than the quantitative traits. The useful quantitative traits often used as identifying marks of the genotypes indicated by days to flowering, days to maturity, and seed size.

The experiment was carried out to characterize and to rejuvinate some soybean genotypes of RILET germplasm collection based on the qualitative traits such as plant type, hypocotyl color, flower color, matured pod color, and seed color, and the quantitative traits such as days to flowering, days to maturity, plant height, seed size, and yield per plant.

## MATERIALS AND METHODS

One hundred and fifteen genotypes of soybean taken from RILET germplasm collection were recharacterized at Kendalpayak Experimental Station during Dry Season 1995. Each genotypes was planted in a 5 m long single row. Plant distance was 10 cm within row and 80 cm between rows, 2 seeds per hole, without replication. Later, the plants were thinned into 50 plantes per row. Fertilizers of 50 kg urea, 75 kg TSP, and 75 kg KCl were applied as basal fertilization. Weeding was intensively done since the plants were 15 days old. Irrigation was applied two or three times. Harvesting was conducted for three times based on the days to maturity. The qualitative traits as the primary identifying mark were observed upon plant type, hypocotyl color, flower color, seed color, and matured pod color. While the quantitative traits observed were days to flowering, days to maturity, plant height, 100 seed wiehgt, and dry seed weight per plant.

Mean, range, phenotipic variance, slope, and curtosis were calculated to figure out the distribution of the population studied. Correlation between days to maturity, days to flowering plant height, and 100 seed weight to dry seed weight per plant was also calculated to study howfar these parameters affect the yield.

**Table 1.** The characteristic and frequences of qualitative traits of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

| Characteristics | Frequences | Percentage |
|---|---|---|
| Plant type: | | |
| determinate | 115 | 100 |
| Hypocotyl: | | |
| purple | 100 | 87 |
| green | 15 | 13 |
| Flower color: | | |
| purple | 111 | 90 |
| white | 14 | 10 |
| Matured pod color: | | |
| brown | 110 | 96 |
| yellow | 5 | 5 |
| Seed color: | | |
| yellow | 38 | 33 |
| green | 37 | 32 |
| black | 25 | 22 |
| yellow/green | 5 | 4 |
| green/yellow | 10 | 9 |

## RESULT AND DISCUSSION

### The Qualitative Traits

The soybean population studied had low variability in all traits, except seed color (Figure 1-5). All genotypes were determinate, 87% had purple hypocotyl, and 13% had green hypocotyl. The genotypes were comprised of 90% with purple flower, and 10% with white flower, 96% brown, and 4% yellow pod color. For the seed coated color trait, 33% of the genotypes were yellow, 32% green, 22% black, and 13% were mixed of yellow and green (Table 1). Seed color was pressumed have some relation with the resistance to seed deterioration during storage. The black coated soybean lines exhibited the best storability (Nugraha *et al.*, 1991).

### The Quantitative Traits

Days to flowering were varied from 37 to 54 days with the average of 46 days (Table 2), and distributed in a positively skewed distribution curve (Figure 6). The curve explained that mostly genotypes were short and intermediate maturity. Sixty nine genotypes or 60% of the population reached the days to flowering ranged from 37 to 48 days. The curve of both days to maturity

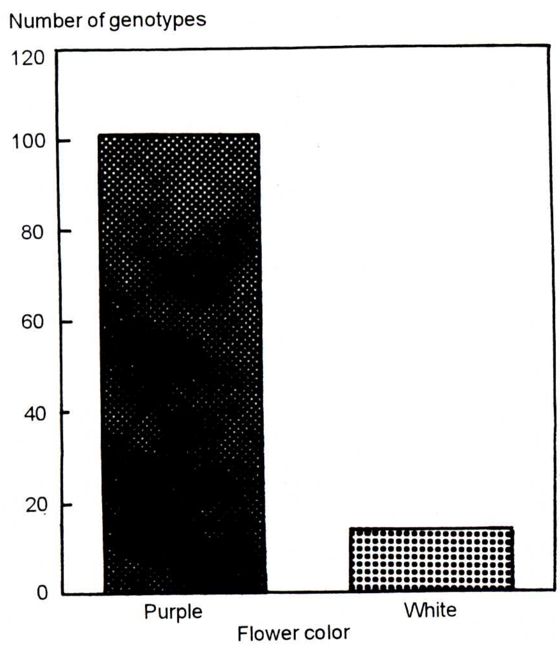


Figure 1. Flower color of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

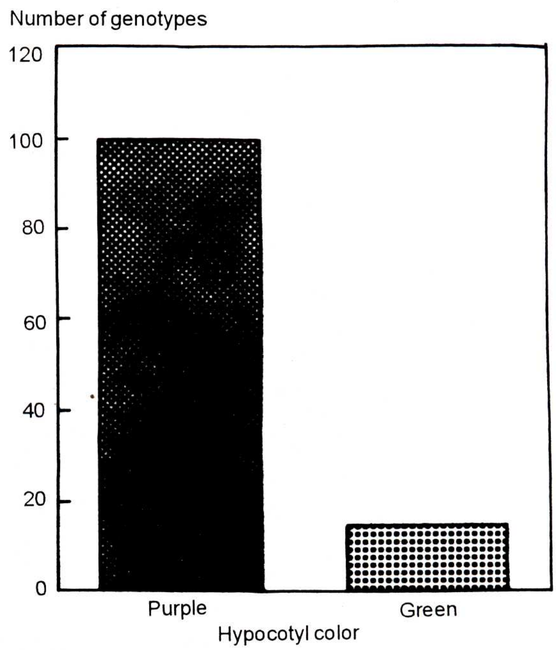


Figure 2. Hypocotyl color of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

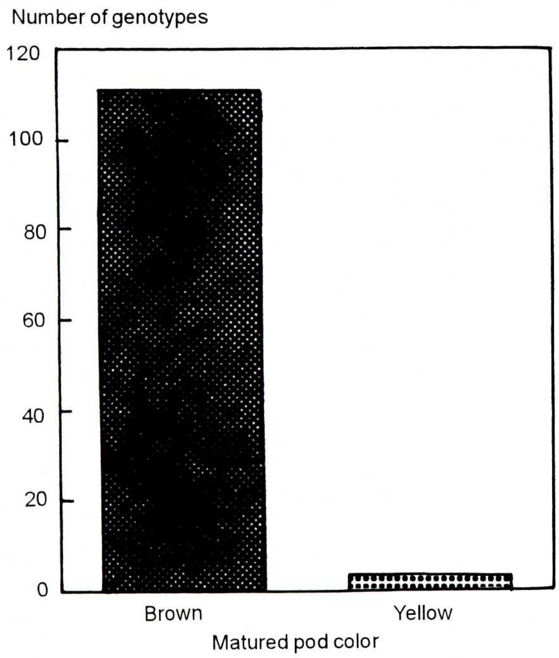


Figure 3. Matured pod color of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

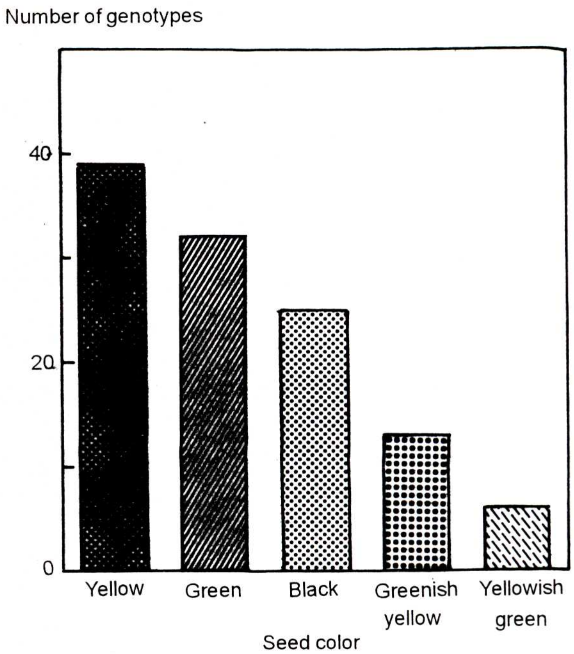


Figure 4. Seed color of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

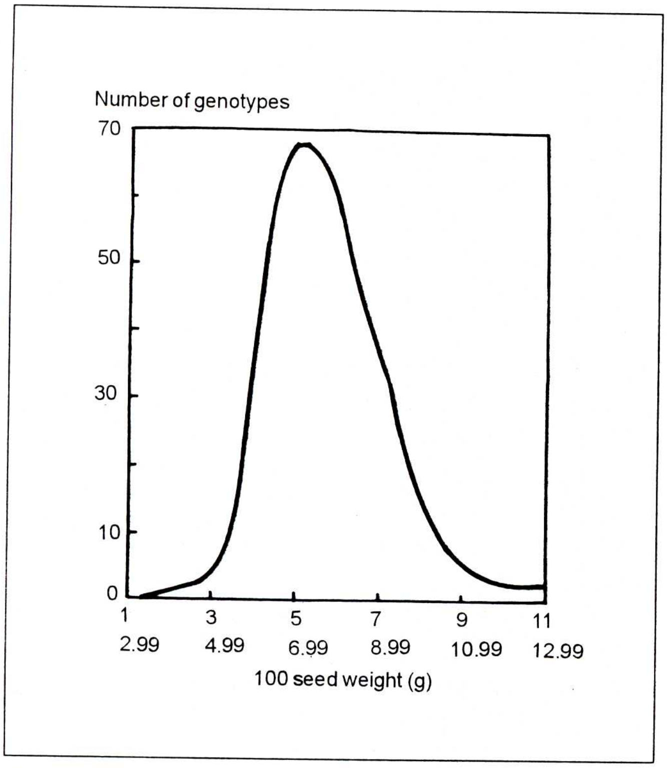


Figure 5. Plant type of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

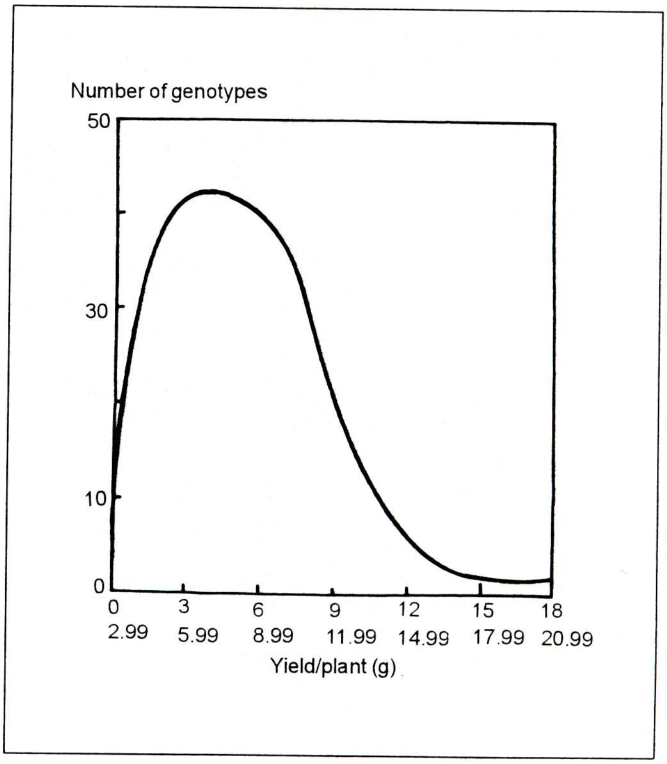


Figure 6. Days to flowering of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

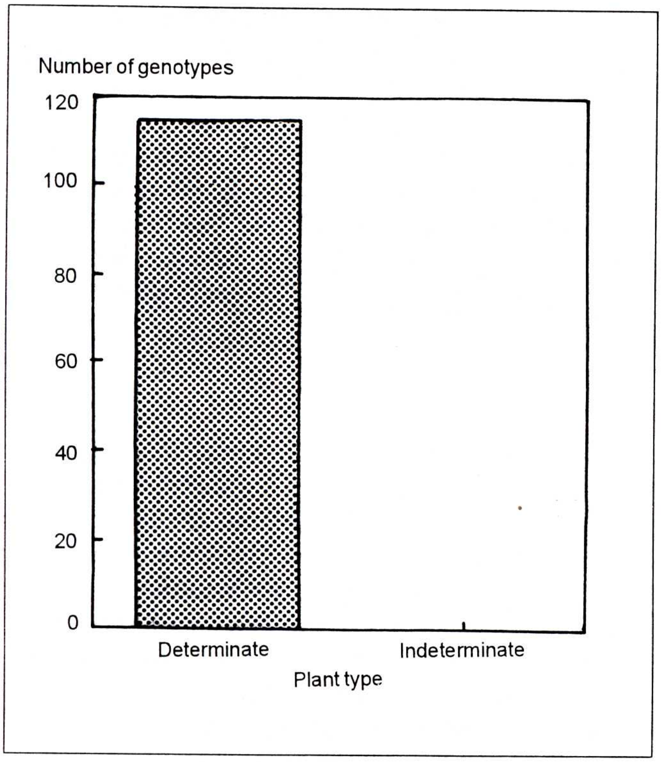


Figure 7. Days to maturity of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

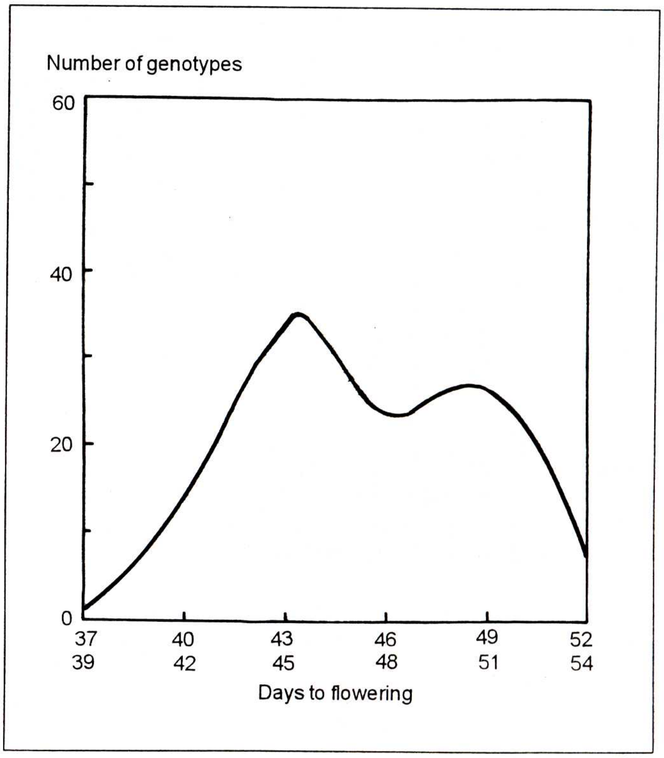


Figure 8. Plant height of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

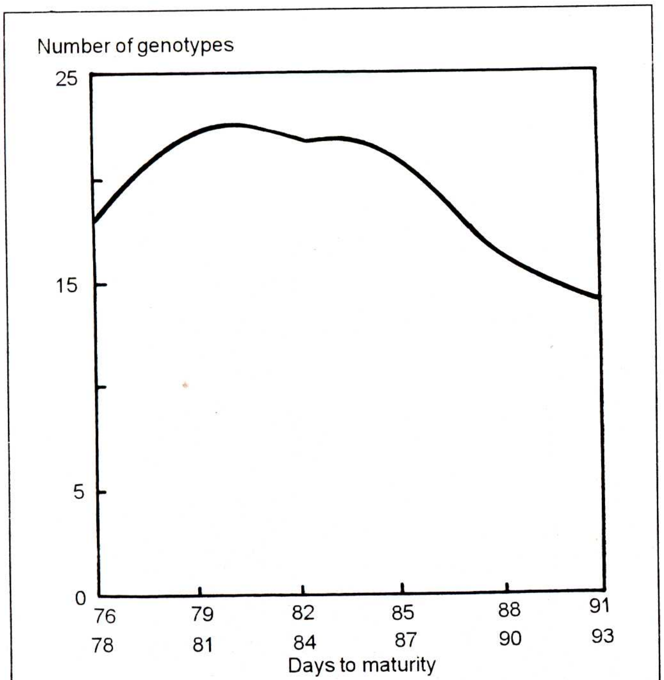


Figure 9. One hundred seed weight of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

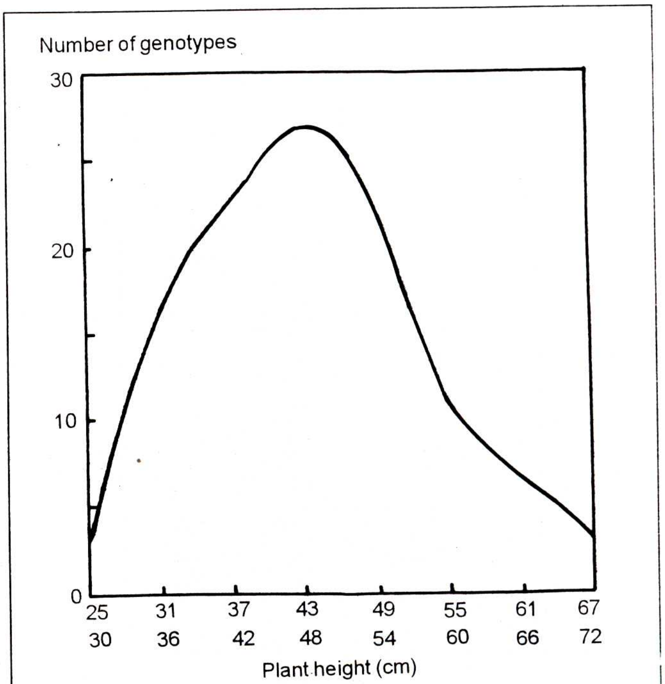


Figure 10. Yield per plant of 115 genotypes of soybean. Kendalpayak, Dry Season, 1995.

**Table 2.** Mean, range, phenotipic variance, slope, and curtosis of some quantitative traits of 115 genotypes of soybean. Kendalpayak, Dry Season 1995.

| Traits | Mean | Range | Phenotipic variance | Slope | Curtosis |
|---|---|---|---|---|---|
| Days to flowering (days) | 46.4 | 37.0-53.0 | 12.34 | 0.04 | -1.20** |
| Days to maturity (days) | 83.7 | 76.0-93.0 | 24.40 | 0.19 | -1.15** |
| Plant height (cm) | 46.7 | 27.4-71.8 | 89.18 | 0.35* | -0.24 |
| 100 seed weight (g) | 6.8 | 4.5-12.4 | 1.94 | 1.11** | 1.98** |
| Yield/plant (g) | 7.8 | 3.3-20.5 | 11.48 | 1.25** | 2.48** |

**Significantly different at 1%
* Significantly different at 5%

**Table 3.** Correlation between days to flowering, days to maturity, plant height, and 100 seed weight with yield per plant of 115 genotypes of soybean. Kendalpayak, Dry Season 1995.

| | Correlation value |
|---|---|
| Days to flowering | 0.55** |
| Days to maturity | 0.60** |
| Plant height | 0.40** |
| 100 seed weight | -0.19* |

**Significantly different at 1%
* Significantly different at 5%

and plant height were positive and platykurtic (Figure 7, 8). In the other hand, the curves for seed size and yield per plant were positive and leptokurtic (Figure 9, 10). It revealed that the genotypes studied were dominated with the short maturity, short plant height, small seed, and low yield potential genotypes. There were six short maturity genotypes with the days to flowering varied from 37 to 42 days, namely MLG 3013, MLG 3037, MLG 2759, MLG 3070, and MLG 2857 (Table 4). Days to flowering and days to maturity were important traits for breeding program especially for rust resistance. Days to maturity and days to flowering were the most considered traits, especially in searching the parent as a source of rust resistance (Shanmugasundaram and Toung, 1982). Furthermore, other researcher stated that the pattern of plant development involving days to maturity and days to flowering influenced degree of resistance of the genotypes. This was due to rust was intensively attacked during generative phase of the plants (Tschanz and Tsai, 1982).

Days to flowering was significantly correlated with yield per plant indicated that the extend of days to flowering followed by the increase of yield per plant (Table 3). Days to maturity of the genotypes varied from 76 to 93 days with the average of 84 days (Table 2). There were 73 genotypes with the days to maturity less than 84 days and 52 genotypes longer than 84 days (Table 4). In this population, it was found that less days to flowering genotypes more than less days to maturity genotypes. It explained that some genotypes completed vegetative phase longer than that of other genotypes. Omar (1983) stated that days to maturity and days to flowering were important characters which might influenced planting pattern and plant index.

Plant height was the most varied character in this population ranged from 27.4 to 70.8 cm with the average of 46.7 cm (Table 2). The distribution of plant height value in this population was fit on the positive curve (Figure 8) meaning that more genotypes having short plant height. Fourty six percent of the genotypes were shorter than 46.7 cm. In addition, plant height was significant and positively correlated with yield although not so closed (Table 3).

Seed size measured by means of 100 seed weight was distributed fitting on the positive curve (Figure 9) indicated that a larger number of genotypes had small size. The range of 100 hundred seed weight was 4.5 to 12.4 g with average of 6.8 g (Table 2). The distribution of the seed size in this population was 73% of the genotypes having 100 seed weight smaller than 7.5 g and 27% of them ranged from 7.5 to 11.4 g. As Ramsen *et al.* (1984) investigated, we found that in this population the seed size was not closely correlated with the yield (Table 3).

The yield which was estimated from dry seed weight per plant ranged from 7.6 to 20.5 g (Table 1). The yield of 68% of the genotypes was smaller than the average (7.6 g). There were four genotypes yielding much higher than the average, namely MLG 2876, MLG 2818, MLG 2831, and MLG 2684 (Appendix 1).

The most prospective genotype, MLG 2876 gave the highest yield of 20.5 g per plant, and has small seed size, short plant, long maturity, and green seed. Green seed, however, was not suitable with farmer and consumers preferences. MLG 2876 might be valuable as genetic sources for high yielding variety.

## CONCLUSSION AND SUGGESTION

1. The distribution of some quantitative traits in this population such as seed size and yield were fit on the positive-leptokurtic curve. In the other hand, the days to maturity, the days to flowering, and the plant height was fit on the positive-platikurtic curve.
2. The population was suitable to develop the short maturity, small seed size, and short plant varieties of soybean.
3. Characterization, evaluation, and rejuvination absolutely need sufficient cost, power, and facilities. However, those activities recently were considered as non-research and non-budged activities. This regulation will be a serious constraint to develop germplasms research activities.

## ACKNOWLEDGEMENT

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**Appendix 1.** Qualitative and quantitative traits of 115 genotypes of soybean of RILET germplasm colletion. Kendalpayak, Dry Season 1995.

| Genotypes | Flowering (days) | Maturity (days) | Plant height (cm) | 100s weight (g) | Yield/plant (g) | Hypocotyl color | Plant type | Flower color | Pod color | Seed color |
|---|---|---|---|---|---|---|---|---|---|---|
| MLG2521 | 50 | 93 | 56.8 | 5.7 | 14.2 | P | D | P | B | Y |
| MLG2535 | 50 | 87 | 50.4 | 7.9 | 3.7 | P | D | P | B | Y |
| MLG2547 | 50 | 86 | 53.4 | 6.9 | 8.4 | P | D | P | B | Y |
| MLG2550 | 49 | 85 | 46.4 | 7 | 8.0 | P | D | P | B | G/Y |
| MLG2551 | 50 | 85 | 51 | 8.7 | 9.0 | G | D | W | B | Y/G |
| MLG2552 | 50 | 93 | 52.4 | 10.4 | 8.1 | G | D | W | B | Y |
| MLG2553 | 43 | 77 | 40.2 | 5.24 | 5.7 | P | D | P | B | G |
| MLG2556 | 44 | 85 | 41.4 | 8 | 6.0 | P | D | P | B | G/Y |
| MLG2563 | 50 | 91 | 51.8 | 5.9 | 9.0 | P | D | P | B | G |
| MLG2509 | 47 | 79 | 39.6 | 7.6 | 6.5 | P | D | P | B | B |
| MLG2524 | 50 | 85 | 51.8 | 5.9 | 7.2 | P | D | P | B | G |
| MLG2535 | 50 | 92 | 50.6 | 7.61 | 6.5 | P | D | P | B | Y |
| MLG2624 | 44 | 79 | 48.2 | 8.7 | 8.5 | G | D | P | B | Y/G |
| MLG2633 | 46 | 77 | 39.4 | 6.74 | 5.3 | P | D | P | B | B |
| MLG2650 | 50 | 93 | 50.4 | 8.52 | 10.3 | P | D | P | B | Y |
| MLG2665 | 50 | 89 | 64.8 | 5.7 | 6.4 | P | D | P | B | G |
| MLG2680 | 49 | 85 | 57.4 | 6.42 | 15.9 | P | D | P | B | G/Y |
| MLG2681 | 53 | 88 | 67.6 | 5.2 | 11.6 | P | D | P | B | G |
| MLG2684 | 52 | 90 | 70.6 | 6.6 | 12.6 | P | D | P | B | G |
| MLG2690 | 49 | 86 | 51.2 | 5.1 | 10.5 | P | D | P | B | B |
| MLG2620 | 50 | 86 | 62.6 | 6.2 | 6.3 | P | D | P | B | G |
| MLG2604 | 44 | 77 | 35.8 | 6.4 | 4.0 | P | D | P | B | Y |
| MLG2601 | 45 | 76 | 33.2 | 5.92 | 4.0 | G | D | W | B | Y |
| MLG2659 | 50 | 85 | 48 | 5.9 | 9.4 | P | D | P | B | G |
| MLG2624 | 43 | 79 | 46 | 10.4 | 5.9 | G | D | W | B | G/Y |
| MLG2635 | 48 | 86 | 46.2 | 9.01 | 9.5 | P | D | P | B | Y |
| MLG2632 | 44 | 77 | 37 | 7.33 | 3.8 | P | D | P | Y | Y |
| MLG2633 | 47 | 79 | 40.4 | 7.62 | 12.1 | P | D | P | B | B |
| MLG2680 | 51 | 90 | 54.4 | 6.1 | 10.5 | P | D | P | B | G/Y |
| MLG2690 | 50 | 89 | 47 | 5.35 | 10.1 | P | D | P | B | Y/G |
| MLG2681 | 50 | 91 | 55.8 | 5.42 | 11.1 | P | D | P | B | G/Y |
| MLG2879 | 50 | 82 | 54.8 | 5.43 | 5.3 | P | D | P | B | G |
| MLG2811 | 50 | 88 | 47.6 | 6.4 | 11.9 | P | D | P | B | G/Y |
| MLG2818 | 50 | 90 | 40 | 5.2 | 16.7 | P | D | P | B | G |
| MLG2876 | 52 | 91 | 42.2 | 6.2 | 20.5 | P | D | P | B | G |
| MLG2810 | 43 | 82 | 48.2 | 7.2 | 6.6 | P | D | P | B | Y/G |
| MLG2857 | 42 | 85 | 45 | 8.1 | 7.1 | P | D | P | B | Y |
| MLG2899 | 50 | 87 | 54 | 6.8 | 5.5 | P | D | P | B | Y |
| MLG2900 | 50 | 88 | 50.4 | 6.8 | 8.1 | P | D | P | B | Y |
| MLG2856 | 48 | 89 | 38 | 11.2 | 8.6 | P | D | P | B | Y |
| MLG2831 | 49 | 89 | 67 | 6.1 | 13.4 | P | D | P | B | G/Y |
| MLG2815 | 51 | 92 | 46 | 5.6 | 19.5 | P | D | P | B | G/Y |
| MLG2834 | 50 | 91 | 53.6 | 6.2 | 8.8 | P | D | P | B | Y/G |
| MLG2831 | 50 | 89 | 64.8 | 5.5 | 13.4 | G | D | W | B | G |
| MLG2814 | 50 | 85 | 49 | 6.6 | 7.3 | P | D | P | B | Y |
| MLG2897 | 48 | 85 | 56 | 5.6 | 11.6 | P | D | P | B | G/Y |
| MLG2884 | 47 | 77 | 48.6 | 6.9 | 6.5 | P | D | P | B | B |
| MLG2978 | 44 | 77 | 44.4 | 6.4 | 6.3 | P | D | P | B | B |
| MLG2979 | 42 | 77 | 48.8 | 6.8 | 7.0 | P | D | P | B | B |
| MLG3015 | 43 | 84 | 48.4 | 8.4 | 8.0 | P | D | P | B | Y |
| MLG2999 | 44 | 77 | 43.2 | 6.7 | 8.3 | P | D | P | B | B |
| MLG3000 | 44 | 79 | 35.8 | 7.7 | 8.3 | G/P | D | P | Y | Y |
| MLG2984 | 45 | 79 | 40 | 6.6 | 6.3 | P | D | P | B | B |
| MLG2983 | 43 | 77 | 34 | 5.8 | 5.6 | P | D | P | B | B |
| MLG3017 | 45 | 77 | 29.2 | 6.7 | 6.1 | P | D | P | B | B |
| MLG3013 | 37 | 80 | 35.4 | 8.1 | 6.9 | P | D | W | B | Y |
| MLG3007 | 44 | 84 | 42.8 | 8.7 | 9.2 | P | D | P | B | Y |
| MLG3037 | 42 | 83 | 48.6 | 7.3 | 8.4 | P | D | W | B | G |
| MLG2992 | 43 | 79 | 36 | 9.3 | 1.0 | P | D | P | B | Y |
| MLG2998 | 44 | 79 | 28.6 | 8.2 | 5.8 | P | D | P | Y | Y |
| MLG3012 | 43 | 79 | 34.4 | 6.3 | 6.2 | P | D | W | B | Y |
| MLG2632 | 41 | 79 | 34.2 | 6.8 | 2.3 | P | D | P | B | Y |
| MLG2601 | 41 | 77 | 33 | 5.9 | 3.3 | P | D | P | B | Y |
| MLG3025 | 45 | 79 | 36.4 | 6.9 | 4.7 | P | D | P | B | B |

**Table 4. (continues)**

| Genotypes | Flowering (days) | Maturity (days) | Plant height (cm) | 100s weight (g) | Yield/plant (g) | Hypocotyl color | Plant type | Flower color | Pod color | Seed color |
|---|---|---|---|---|---|---|---|---|---|---|
| MLG3027 | 45 | 79 | 33.6 | 6,8 | 4.9 | P | D | P | B | B |
| MLG3035 | 44 | 87 | 42 | 7 | 7.6 | P | D | W | B | Y |
| MLG3009 | 43 | 79 | 38.2 | 6.3 | 7.6 | P | D | P | B | B |
| MLG3028 | 43 | 84 | 37.2 | 8.9 | 6.1 | P/G | D | P | B | Y |
| MLG2742 | 44 | 84 | 27.4 | 12.4 | 3.5 | P | D | P | B | Y |
| MLG2794 | 52 | 92 | 60.6 | 4.5 | 9.1 | P | D | P | B | |
| MLG2684 | 52 | 92 | 48.8 | 4.6 | 10.6 | P | D | W | B | G/Y |
| MLG2795 | 51 | 90 | 63 | 5 | 8.2 | P | D | P | B | G |
| MLG2759 | 44 | 77 | 39.4 | 5.4 | 5.3 | P | D | P | B | G |
| MLG2792 | 50 | 84 | 50.4 | 5.1 | 4.7 | P | D | P | B | G |
| MLG2761 | 43 | 84 | 36 | 5.5 | 7.6 | P | D | P | B | G |
| MLG2763 | 43 | 79 | 35.6 | 5.7 | 5.7 | P | D | P | B | G |
| MLG2765 | 50 | 84 | 38.2 | 6.7 | 8.0 | P | D | P | B | G |
| MLG2767 | 52 | 92 | 53.4 | 4.8 | 7.0 | P | D | P | B | G/Y |
| MLG2769 | 52 | 91 | 61.6 | 5.3 | 10.5 | P | D | P | B | Y |
| MLG2775 | 43 | 87 | 44.2 | 6.6 | 8.8 | P/G | D | P | B | Y |
| MLG2778 | 49 | 84 | 52 | 7.1 | 12.6 | P | D | P | B | Y |
| MLG2779 | 43 | 82 | 53 | 7.3 | 6.2 | P | D | P | B | Y |
| MLG2780 | 45 | 84 | 48.8 | 8.2 | 7.9 | P | D | P | B | Y |
| MLG2792 | 52 | 93 | 70.8 | 7.2 | 11.3 | P | D | P | B | G |
| MLG2797 | 44 | 87 | 49.6 | 8.2 | 11.3 | P | D | P | B | Y |
| MLG2798 | 43 | 84 | 48.6 | 7.6 | 6.1 | P | D | P | B | Y |
| MLG2760 | 43 | 82 | 39.8 | 6.5 | 5.3 | P | D | P | B | G |
| MLG2759 | 42 | 81 | 39.6 | 5.5 | 5.2 | P | D | P | B | G |
| MLG2758 | 44 | 82 | 39.8 | 6.1 | 4.4 | P | D | P | B | G |
| MLG2757 | 43 | 79 | 36.2 | 5.4 | 5.5 | P | D | P | B | G |
| MLG2755 | 45 | 82 | 38 | 4.9 | 4.9 | P | D | P | B | G |
| MLG2754 | 43 | 80 | 48.4 | 5.2 | 4.9 | P | D | P | B | G |
| MLG2753 | 44 | 85 | 43 | 5.3 | 4.5 | P | D | P | B | G |
| MLG2750 | 49 | 84 | 56 | 8.2 | 10.0 | P | D | P | B | Y |
| MLG2740 | 48 | 85 | 44.4 | 7.9 | 5.9 | G | D | W | B | Y |
| MLG2739 | 49 | 85 | 53.2 | 8.1 | 7.5 | P/G | D | P | B | Y |
| MLG2737 | 50 | 90 | 60.2 | 5.8 | 9.6 | P/G | D | P | B | Y |
| MLG2731 | 43 | 83 | 53.4 | 6.7 | 5.1 | P | D | P | B | B |
| MLG2729 | 47 | 77 | 31.8 | 8.5 | 4.6 | P | D | P | B | B |
| MLG2728 | 43 | 82 | 56.6 | 7 | 4.2 | P | D | W | B | B |
| MLG2723 | 42 | 88 | 54.8 | 6.7 | 4.8 | P | D | P | B | B |
| MLG3035 | 43 | 84 | 54.6 | 7 | 4.2 | P | D | P | B | G |
| MLG3097 | 50 | 88 | 83.6 | 5.3 | 0.8 | P | D | P | B | G |
| MLG3037 | 42 | 79 | 43.2 | 7.4 | 4.6 | G | D | P | B | G |
| MLG3076 | 42 | 77 | 40 | 6.2 | 4.5 | G | D | P | B | B |
| MLG3074 | 44 | 79 | 47 | 6 | 5.3 | P | D | P | B | B |
| MLG3069 | 44 | 78 | 47.2 | 6.6 | 4.3 | G | D | W | B | Y |
| MLG3079 | 44 | 77 | 36 | 6.2 | 3.3 | G | D | W | B | B |
| MLG3081 | 44 | 78 | 46.8 | 9 | 4.9 | P/G | D | P | B | B |
| MLG3077 | 49 | 87 | 48.8 | 7.2 | 7.0 | P | D | W | B | B |
| MLG3087 | 44 | 79 | 41.4 | 6.8 | 4.1 | P | D | P | B | Y |
| MLG3080 | 45 | 79 | 46 | 5.7 | 4.4 | G | D | W | B | B |
| MLG3082 | 43 | 79 | 36.4 | 8.9 | 5.9 | P | D | P | B | B |
| MLG3083 | 47 | 79 | 36.6 | 8.1 | 4.6 | P | D | P | B | B |
| MLG3078 | 51 | 91 | 51.6 | 6.9 | 8.0 | P | D | W | B | G/Y |

D = determinate, P = purple, W = white, B = brown, Y = yellow, G = green, B = black