

PERFORMANCE OF THE NEW HYBRID MAIZE VARIETY V-118 IN SOUTH EASTERN AND CENTRAL HIGHLANDS REGIONS

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Maize cultivated areas in the southeastern and central highlands occupied 30% of the total areas in the country. The most commonly used hybrids in these regions such as C.919, G-49, NK66, NK67 and CP-888 are imported from oversea companies and being sold at a very high price. Therefore, the development of new domestic hybrids with promising stable yield has always been a big demand of the production.

V-118, a maize single cross developed by Institute of Agricultural Science for Southern Vietnam from two inbred lines (D34 and D14). This hybrid had been selected based on its performance through various experiments in southern ecological regions from 2002 to 2009. Performance of the cross had shown its promising stability yield. In intensive farming condition, this cross could yield up to 10 tons per hectare. On farmer fields, V-118 gave yield from 7-8 tons per hectare with duration of 87-92 days in southeastern and 95-105 days in central highlands. This cross exhibited good tolerance to lodging, moderate resistance to *Ostrinia funacalis* and *Rhizotonia Solani*. In production fields, V-118 showed yield almost similar to three prominent early hybrids NK67, G49 and C.919 and better than that of CP-888. V-118 can be cultivated in three crops around the year in the southeastern and central highlands (summer-autumn, autumn-winter and winter- spring). This hybrid still gives high yield (9-10 tons/ha) on rice land in winter-spring season to help the farmers easy to select the varieties for their production.

V-118 had been approved by the Ministry of Agriculture and Rural Development in the year 2010 as new hybrid recommended to production in the South Eastern and Central Highlands regions.

Table 1. Grain yield (ton/ha) through locations, stable and adaptable indexes (*summer-autumn 2007*)

| Hybrids | Ba Ria-Vung Tau | | Dong Nai | | Lam Dong (Duc Trong) | Dak Lak (Ea Kar) | Average yield | Stable index | Adaptable index |
|---------------------|-----------------|-----------|-----------|--------|----------------------|------------------|---------------|--------------|-----------------|
| | Chau Duc | Tan Thanh | Trang Bom | Cam My | | | | | |
| G-49 | 6.9 bc | 6.5 cd | 6.9 bc | 7.3 bc | 8.9 | 8.3 | 7.5 | -0.037 | 1.062 |
| V-118 | 7.3 b | 7.2 abc | 7.4ab | 7.5 b | 10.1 | 8.5 | 8.0 | -0.034 | 1.258 |
| NK66 | 7.2 b | 7.6 a | 7.8a | 6.8 bc | 9.2 | 8.3 | 7.8 | 0.18 * | 0.834 |
| V98-1 | 8.3 a | 7.4 a | 7.2abc | 8.3a | 9.8 | 8.0 | 8.2 | 0.26 * | 0.853 |
| C.919 | 7.2 b | 7.2 ab | 7.3ab | 7.5 b | 8.6 | 8.7 | 7.8 | -0.006 | 0.731 |
| CP-888 | 6.2 c | 5.8 d | 6.0 d | 6.5 c | 8.4 | 7.7 | 6.8 | -0.051 | 1.133 |
| CV(%) | 7.9 | 6.8 | 7.4 | 7.0 | 10.2 | 6.7 | | | |
| LSD _{0.05} | 0.8 | 0.7 | 0.8 | 0.7 | | | | | |

Table 2. Grain yield (tons/ha) through locations, stable and adaptable indexes (*autumn-winner 2007*)

| Hybrids | Ba Ria-Vung Tau | | Dong Nai | | Lam Dong | Dak Lak | Average yield | Stable index | Adaptable index |
|---------------------|--------------------|--------------|--------------|-----------|----------------|-------------|------------------|-----------------|--------------------|
| | Chau Duc | Tan Thanh | Trang Bom | Cam My | (Duc Trong) | (Ea Kar) | | | |
| G-49 | 7.1 | 5.3 bc | 6.8 a | 5.8 cd | 7.4 cd | 6.5 a | 6.5 | 0.136 * | 0.905 |
| V-118 | 7.0 | 6.2 ab | 7.1 a | 7.0 ab | 7.5 cd | 6.7 a | 6.9 | -0.023 | 0.555 |
| NK66 | 6.7 | 6.8 a | 6.8 a | 6.4 bc | 9.2 a | 6.8 a | 7.1 | 0.231 * | 1.258 |
| V98-1 | 7.1 | 6.4 a | 6.8 a | 7.4 a | 9.0 a | 6.9 a | 7.3 | 0.069 | 1.182 |
| C.919 | 7.3 | 6.0 ab | 7.4 a | 5.7 cd | 7.9 bc | 6.2 ab | 6.7 | 0.258 * | 1.034 |
| CP-888 | 6.2 | 5.0 c | 5.9 b | 5.5 d | 6.7 d | 5.4 b | 5.8 | -0.022 | 0.813 |
| CV(%) | 8.6 | 10.2 | 7.9 | 7.5 | 7.8 | 8.6 | | | |
| LSD _{0.05} | | 0.9 | 0.8 | 0.7 | 0.9 | 0.8 | | | |

Table 3. Grain yield (tons/ha) through locations in the central highlands (*winter - spring 2008*)

| Hybrids | Dak Lak | | Gia Lai | | Average yield |
|---------------------|-----------|----------|-----------|-----------|---------------|
| | Cu M' Gar | Cu Kuin | Dak Doa 1 | Dak Doa 2 | |
| CP - 888 | 6.4 f | 5.8 e | 4.4 e | 3.8 de | 5.1 f |
| G-49 | 9.0 ab | 8.1 abc | 6.4 ab | 4.9 abc | 7.1 b |
| NK67 | 9.4 ab | 8.5 ab | 6.5 a | 5.5 a | 7.5 ab |
| V98-1 | 9.0 ab | 8.2 abc | 5.9 abcd | 5.0 abc | 7.0 bc |
| V-118 | 10.0 a | 9.1 a | 6.5 a | 5.2 ab | 7.7 a |
| C.919 | 8.3 bcd | 7.4 bcd | 5.6 abcd | 4.7 abcd | 6.5 cd |
| NK66 | 8.7 bc | 7.9 abcd | 6.1 abc | 5.2 ab | 7.0 bc |
| CV (%) | 11.4 | 9.2 | 11.1 | 11.9 | 9.5 |
| LSD _{0.05} | 1.0 | 1.2 | 1.0 | 1.0 | 0.5 |

Table 4. The effect of density and fertilizer levels to grain yield of two hybrids (tons/ha) in the central highlands (*winter- spring 2009*)

| Factors | Hybrids | V-118 | | NK67 | |
|------------------------------------|--|---------|---------|---------|---------|
| | | Dak Lak | Gia Lai | Dak Lak | Gia Lai |
| Densities (A) | | | | | |
| | 57,000 plants/ha | 7.0 b | 7.5 b | 7.7 b | 7.6 b |
| | 61,500 plants/ha | 7.3 b | 7.9 b | 8.7 a | 8.1 a |
| | 71,400 plants/ha | 8.0 a | 8.5 a | 7.8 b | 7.6 b |
| | 76,900 plants/ha | 7.5 b | 7.9 b | 7.6 b | 7.4 b |
| LSD _{0.05} | | 0.5 | 0.5 | 0.3 | 0.3 |
| Fertilizer formulations (B) | | | | | |
| | 80 N - 100 P ₂ O ₅ - 60 K ₂ O | 6.3 c | 6.7 d | 7.8 bc | 7.5 bc |
| | 120 N - 100 P ₂ O ₅ - 80 K ₂ O | 6.6 b | 7.1 c | 7.5 c | 7.3 c |
| | 160 N - 100 P ₂ O ₅ - 100 K ₂ O | 8.4 a | 8.8 b | 8.4 a | 8.1 a |
| | 200 N - 100 P ₂ O ₅ - 120 K ₂ O | 8.5 a | 9.2 a | 8.0 b | 7.8 ab |
| LSD _{0.05} | | 0.3 | 0.3 | 0.4 | 0.4 |
| LSD _{0.05} (AxB) | | * | ** | NS | NS |
| CV(%) | | 8.0 | 7.2 | 6.8 | 7.1 |

Means in the same column with common superscript are non-significant differences at $P < 0.05$

*: Significant at $P < 0.05$, **: Significant at $P < 0.01$ NS: Non significant



V-118 (autumn-winter 2008) in Dak Lak



Single hybrid maize V-118



High selling percent



Strong brace roots



Orange flint seed



Hybrid V-118 (winter – spring 2010) in central highland