

BREEDING AND DEVELOPMENT OF HYBRID MAIZE VARIETY VN112

Maize cultivated areas in Southern provinces accounted for 50% of the total areas in the country. The common hybrids have been used are LVN10, CP888, G49, C919, B9698, C5252, NK54, VN25-99, V98-1 and NK66. From which two hybrids LVN10 and CP888 have been shared the major part on the market due to their good yield potentials and qualities. However, these hybrids are late in maturity that bring difficulties to farmers in fitting their crop rotation, and tendency of yield reduction due to disease incidence which have been reported in recent crops. Three hybrids G49, C919 and B9698 are medium but their yields are not really better than that of CP888 and seeds are being sold at very high prices. Therefore, breeding and development of new early hybrids with good yield potential and qualities is still a great demand of



farmers.

In response to the demand of new early hybrids in the South, we have taken the study “Development of new early hybrid maize with good yield and quality, adapting to cultivation practices in southern provinces”

MATERIALS AND METHODS

Parental materials of hybrid VN112 had been well selected from a number of crosses in Hung Loc Agricultural Research Center. CIMMYT’s methods of experimentation were used in the study. Experimental data were calculated using MSTATC program. Official testing, Value of Cultivation and Use testing (VCU), Distinctness

Uniformity and Stability testing (DUS), were carried out by Central Center for Seed Certification and Variety testing.

RESULTS AND DISCUSSION

- Hybrid VN112 has been selected basing



on its performance through various experiments in different ecological regions in Southern parts from 2002 to 2006. This hybrid yielded better than CP888 19-30% on average, with the probability of confidence >95% at most of the experiments.

- Its growth duration varied 88-92 days in Southeastern region and 94-97 days in Central Highlands. Plant height was noticed as 180-220cm; it exhibited its moderate resistance to *Rhizoctonia solani* and leaf blight; good tolerance to drought; shelling percent of 78%; and belongs to flint orange-yellow grain. Grain yield potential is 6-10 tons per hectare.

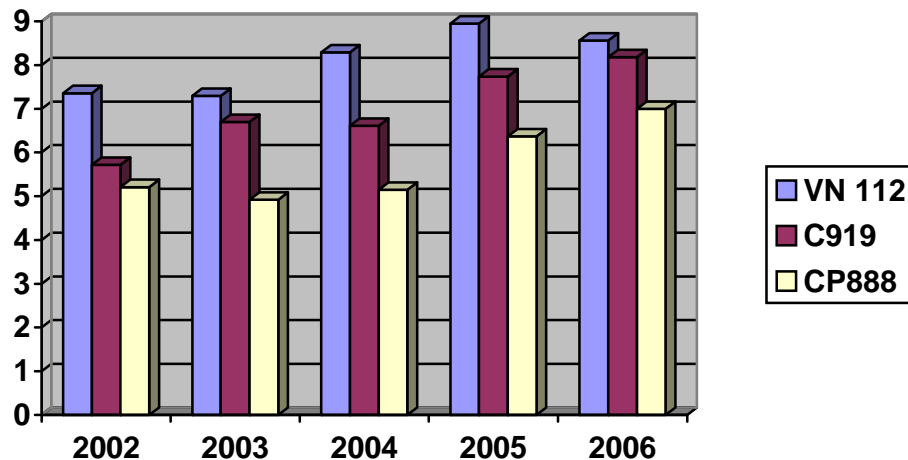


Figure 1: Average grain yields (tons/ha) of VN112, C919 and CP888 in 2002, 2003, 2004, 2005 and 2006 trials.

Table 1: Agronomical aspects of some hybrids in experiments

Hybrids	Height (cm)		Husk cover (1-5)	<i>Rhizoctonia</i> (1-5)	Days to flower		Growth duration	
	plant	ear			Southeastern	Central Highlands	Southeastern	Central Highlands
NK66	246	126	2.0	2.0	49-53	58-62	95-100	110-115
NK 54	249	117	2.0	2.5	50-53	57-61	95-100	110-115
VN112	220	105	2.5	2.5	48-52	54-56	88-93	95-100
V2002	242	121	2.5	2.5	48-52	54-56	90-93	95-100
C919	235	117	2.5	2.8	50-53	56-59	90-95	105-115
CP888	249	133	1.5	3.0	53-56	63-65	97-105	110-120

Table 2: Grain yield (tons/ha) of some hybrids tested from 2004 to 2006

Hybrids	Southeastern region						Central Highlands				Overall average	
	TB SA04	TB AW04	XL SA04	CĐ SA04	TN SA05	average	ĐL SA04	LĐ SA04	ĐL SA06	LĐ SA06		average
NK66	9.69	8.00	7.16	9.93	-	8.69	7.94	11.97	-	-	9.95	9.32
NK 54	7.46	-	7.53	8.59	-	7.86	7.85	9.97	-	-	8.91	8.38
VN112	10.00	6.82	5.55	7.30	7.80	7.54	7.33	9.83	7.05	10.06	8.56	8.05
V2002	8.20	-	6.01	7.55	-	7.24	7.35	10.17	-	-	8.76	8.00
C919	8.99	6.44	6.94	8.76	7.65	7.49	7.02	9.78	6.87	9.06	8.18	7.83
CP888	7.31	5.78	6.19	7.13	7.28	6.63	6.52	7.51	5.69	9.68	7.35	6.99
CV%	6.54	16.80	9.90	6.10	7.20		6.30	6.30	12.50	16.0		
LSD0.05	0.76	1.54	1.02	0.82	1.08		0.96	1.06	1.33	1.40		

Note: SA: Summer-Autumn; AW: Autumn-Winter.

TB: Trang Bom; XL: Xuan Loc; CĐ: Chau Duc; TN: Thong Nhat; ĐL: Đắk Lắk; LĐ: Lam Dong.



- Development of early hybrid VN112 is a response to the demand of maize farmers, facilitating them in cropping practices, escaping droughts at middle and end of cropping season. Growing VN112 could save 20-30% input for seed cost as compared to the imported hybrids, with the income of VND5.0-7.0 million/ha.

CONCLUSIONS

- Hybrid maize VN112 matures early (88-92 days in Southeastern region and 93-97 days in Central Highlands).
- VN112 has a strong growth, good tolerance to lodging, good agronomy shape, compact canopy, moderate resistant to *Rhizoctonia solani* and *Leaf Blight*.
- VN112 possesses big ear with selling percent of 76-78%, dent grain with orange color. Yield potential ranges from 6.2 to 8.8 tons/ha, 30% above the check. It could be cultivated around the year in Southern provinces.
- VN112 has been approved by the Committee of Science and Technology of the Ministry of Agriculture & Rural Development to be released to low scale production in Southern part of the country.

