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Title: Adoption and impact of VS-536 synthetic maize variety in the tropical region of the southeast of Mexico

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Introduction

Sinthetic maize varieties offer the advantage of the most adaptability, besides, they can be used by farmers for several seasons of planting without decreasing the grain yield, in addition, is relatively easy the seed production of this kind of genotypes (Márquez *et al.*, 1983; Reyes 1985; Sierra *et al.*, 2002).

The industry that produce seed in certified category, is an important part for the adoption and commercial use of improved seed, particularly INIFAP produces basic and registered seed of the synthetic maize variety VS-536, which is used by the seed industry for producing certified seed, and distributed to maize farmers for planting in the tropic of México

Objectives

The objectives of this research were:

- a) To know the yield and agronomic traits of the synthetic maize variety VS-536**
- b) To show the advantages in yield and agronomic traits of VS-536, to farmers, agricultural technics, and seed producers.**
- c) To estimate the grade of adoption and the impact of VS-536 in the southeast of Mexico.**

Methodology

Process of getting of VS-536. Campo Cotaxtla. CIRGOC.INIFAP

Year and season	Description of activities
1984A	Formation of diallelic crosses with elite lines in Cotaxtla, Ver., Iguala, Gro., Río Bravo, Tamps., and Ocotlán Jalisco programs
1984B	Evaluation of the diallelic crosses in Cotaxtla, Ver., Iguala, Gro. and Ocozocuaula, Chis.
1985A	Prediction of Synthetic maize varieties based in yield and agronomic traits of the diallelic crosses.
1986B	Formation of single crosses of lines participating in the experimental synthetics
1987A	Genetic recombination of the compounds
1987B- 1990B	Evaluation of experimental synthetics across the 33 environments through the tropic of México
1991A	Definition of Synthetic 4 as VS-536
1991 y 1992	Characterization of VS-536 agree with UPOV suggestions
1992	Provisional register in SNICS
2004	Definitive register of VS-536 in SNICS

A= Ciclo otoño-invierno; B= Ciclo primavera-verano

Activities of transferring technology

From 1992 to a la fecha se ha promovido el uso y comercialización de VS-536 a través de empresas semilleras que producen y distribuyen semilla certificada. Se han llevado a cabo eventos demostrativos y Días del Productor Maicero en el Campo Experimental Cotaxtla. Así también, eventos y recorridos técnicos con empresas o grupos productores de semilla y la producción de semilla de alto registro, en sus categorías básica y registrada, que son la fuente de semilla para avanzar hacia la semilla certificada por parte de las empresas y grupos productores de semilla y difundirla con los productores de maíz.



Results

Yield of maize varieties in the humid tropic of México 1987-1990

Genotype	Yield ^{1/} t ha⁻¹	% Relativo
VS-536	5450	120
V-530	4548	100
VS-525	4144	91
V-524	3999	88

^{1/}Average of 33 experiments in the southeast of Mexico: Veracruz, Tabasco, Campeche, Yucatán Quintana Roo, Chiapas, Guerrero, Michoacan, Jalisco, Colima, San Luis Potosí, Tamaulipas

Agronomic traits of VS-536

VS-536 present 52 to 55 days to tassel and silking, 90 days to physiologic maturity and 120 days from planting date to harvest in spring summer season under rainy conditions, intermediate plant height with an average of 248 cm which permite its adaptation to different production systems. Is tolerant to lodging and the “achaparramiento” disease. It has white dent grain with good husk cover, good industrial quality



**Registered seed, production and distribution of certificate seed of VS-536.
Cotaxtla, Ver. 2003 a 2012.**

Año	SR ^p (kg)	SSC ^q (ha)	PSC ^{††} (ton)	SC ^{¶¶} (ha)
2003	5,832	291.6	1166.4	58,320
2004	5,792	289.6	1158.4	57,920
2005	6,442	322.1	1288.4	64,420
2006	6,894	344.7	1378.8	68,940
2007	5,765	288.25	1153	57,650
2008	5,180	259	1036	51,800
2009	4,015	200.75	803	40,150
2010	8260	413	1652	82600
2011	8460	423	1692	84600
2012	8420	421	1684	84200
Total	65,060	3253	13,012	650,600

^pRegistered seed ; ^qArea covered with certificate seed ; ^{††}Certificate seed production; ^{¶¶}Commercial area.

Seed industry that produces certificate seed of VS-536

The seed industry that produces certificate seed of VS-536 are: SENOVE (Sur de Tamaulipas), JEBLA (Tamaulipas), TERRA SEMILLAS (Piedras Negras, Ver.), Semillas La Ejidal (Medellín de Bravo, Ver.), AGBQ S de RL, Universidad Autónoma Chapingo-Centro Regional Universitario Sur (UACH CRUS) (Oaxaca, Oax), Productores y servicios del sureste SPR de RL (Oaxaca), Gobierno del estado de Puebla, Productores y Semillas Mejoradas SC de RL (Piedras Negras Ver.), Consejo Veracruzano de Productores de Maíz (Isla, Ver.), Imperio del Campo (Veracruz), PROASE (Chiapas), AGRO Las Lolas (Sur de Tamaulipas), Ejido Blanca Flor (Campeche), Fundación Produce Oaxaca (Oaxaca, Oax.), PROSESO (Colima), Productores Asociados de Semillas SC de RL de CV, Ing Alfredo Roberto Lara



Figure 2. Tropical Area of México were is produced and distributed seed of the maize variety VS-536

Conclusions

The certified seed production of VS-536, by the seed industry represents an profitable activity in getting economic resources and an important source of generating journey

The synthetic maize variety VS-536 is an alternative that can get better the commercial production of maize in the tropico of México.

The adoption of the variety VS-536 by the seed industry and farmers organizations that participate in producing certificate seed is an important activity for using and adoption by farmers

The activities in maize breeding, seed production and transferring technology to farmers, technics, and the seed industry permitted to know and adopt the synthetic maize variety VS-536

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