

# AIP-maize: progress review and summary of achievements

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# General outline

- **Brief introduction**
- **Major achievements**
- **Major challenges**
- **The future**



**CIMMYT's maize  
interventions are recent  
as compared to wheat**





# Why maize?





# Need for Feed !





I am more or  
less a value  
added maize !

**Poultry a robust industry  
growing 8-10% annually**









# An attractive commodity for farmers





# More challenges....

- **Maize products development**
  - Low variety turnover
  - Limited diversity (SC, biotic & abiotic stress tolerant maize)
  - Less nutritional quality (QPM, ProA, Kernel Zn)
- **Absence or limited improved varieties/hybrids** (GB, Sindh, Balochistan, AJK)
- **Absence of vibrant maize seed system**
- **Climate change** (floods, thermal heat, change in planting and harvesting dates...)
- **Lack of maize mechanization** (dryer, post harvest tech.)
- **Lack of harmonized seed law and enforcement**



# Achievements in spotlight

- **Product evaluation & validation**
  - More than 2200 entries, 300 sites, 70 trials
  - 49 maize products allocated for further testing and marketing in Pakistan
  - Over 15 maize products in the process of registration
  - New round of allocation in process






# Maize biofortification for better nutrition






# Updates on biofortified maize



منصوبہ برائے جدت زراعت، پاکستان

لحمیات سے بھرپور مکئی  
ہائپر یڈنج برائے نمائش




معیاری کی ضمانت  
کھیت سے پلیٹ تک

**QPHM 200**


لحمیات سے بھرپور مکئی کی خصوصیات :-

- ✓ ماکئی کے تانے میں کمزور (پینڈن) سے مراد ہے۔
- ✓ 100% ماکئی کا 40% فراہم کرنے کی صلاحیت رکھتی ہے۔
- ✓ غیر غور سے کھانے چاہئے ہیں تاکہ مکئی کو 100% استعمال سے مراد ہے۔
- ✓ اعلیٰ ذائقہ رکھتی ہے تاکہ مکئی کو کھانے کے لئے استعمال کیا جاسکے۔




مزید معلومات کے لئے رابطہ کریں

Maize, Sorghum, Millet and Fodder Research Program  
نیشنل ایگرو سائنس ریسرچ سینٹر، اسلام آباد، پاکستان  
Telephone: +92 51 9255049 / +92 51 98732553-4  
www.aip.cimmyt.org



USAID-funded Agricultural Innovation Program

**QUALITY PROTEIN MAIZE**  
Hybrid Demo Seed




Your Seal of Quality  
from the  
Field to the Fork

**QPHM 200**

**Salient Features of Quality Protein Maize:**

- ✓ More rich in quality protein than normal maize
- ✓ Offers 90% of the nutritional value of skim milk
- ✓ Proven to reduce malnutrition in infants and children
- ✓ Good source of protein for livestock, poultry, and the food industry



For More Information:  
Maize, Sorghum, Millet and Fodder Research Program, National Agricultural Research Center (NARC),  
CSI Complex, Park Road, Islamabad, Pakistan.  
Telephone: +92 51 9255049 / +92 51 98732553-8  
www.aip.cimmyt.org



# First batch of PVA hybrids in Pakistan



# Performance of PVA hybrids

NARC 2014 (n=24)	Grain yield (t ha <sup>-1</sup> )	CCRI 2015 (n=24)	Grain yield (t ha <sup>-1</sup> )	ICI-Pakistan 2016 (n=36)	Grain yield (t ha <sup>-1</sup> )	MMRI 2016 (n=36)	Grain yield (t ha <sup>-1</sup> )
HP1060-8	9.55	HP1100-21	9.7	HP1097-2	9.9	Local Check 1	15.4
HP1060-6	9.44	HP1097-10	9.0	HP1100-46	9.3	HP1097-2	13.3
HP1060-1	9.30	HP1100-27	8.8	Local Check 2	8.9	HP1100-22	13.2
HP1060-22	9.21	HP1100-11	8.7	HP1100-31	8.8	HP1100-28	12.9
HP1060-9	8.88	HP1100-46	8.6	HP1100-27	8.8	HP1100-25	12.8
HP1060-15	8.81	HP1097-1	8.4	HP1100-28	8.7	HP1097-10	12.6
HP1060-5	8.57	HP1097-2	8.4	HP1100-24	8.6	HP1100-37	12.5
HP1060-14	8.56	HP1097-4	8.4	HP1097-1	8.5	HP1097-16	12.4
HP1060-4	8.28	HP1100-8	8.3	HP1097-7	8.4	HP1100-46	12.2
HP1060-11	8.11	HP1097-8	8.3	HP1100-21	8.3	HP1097-8	12.1
Mean	7.76	Mean	7.34	Mean	7.88	Mean	11.67
LSD (0.05)	1.96	LSD (0.05)	2.49	LSD (0.05)	1.51	LSD (0.05)	1.55
CV	12.00	CV	16.70	CV	9.17	CV	6.40
p	**	p	*	p	*	p	***



# % Share of products among public and private partners

	Public sector	Private sector
<b>Total share</b>	<b>55</b>	<b>45</b>
<b>Hybrids</b>	<b>35</b>	<b>65</b>
<b>OPVs</b>	<b>90</b>	<b>10</b>
<b>White maize</b>	<b>59</b>	<b>41</b>
<b>Yellow maize</b>	<b>33</b>	<b>67</b>



# Reducing maize yield loss

- **Maize stem borer tolerant OPVs**
- **Allocation on progress**
- **Stem borer mass rearing facility**





# Inauguration of maize stem borer mass rearing facility

















# Seed production in progress

- **More than 2500 kg of parental lines and breeder seeds produced**
- **Seed scale up plan by the partners**
- **Breeder seeds of OPVs available in GB, KPK for further multiplication**







# Capacity building





USAID CIMMYT USAID  
USAID Global Agriculture Innovation Program  
MAIZE BREEDING PROGRAM MANAGEMENT & STATISTICAL DATA ANALYSIS TRAINING  
May 23-27, 2016 Islamabad  
aip.cimmyt.org



# Enhanced partnerships

- 22 partners (10 public and 12 private) having more than 20k staff in total
- Representative from private sector become member of VEC
- More than USD 100k allocated to public and private partners under signed SGA
- Example for win-win PPP approach (NARC reaching progressive farmers through private seed companies)



# Key challenges

- Quality seed production and maintenance of parental lines
- Seed production facilities (processing machines, dryer, isolated fields, storage, packaging, marketing...etc)
- Monitoring nutritional quality (QPM, ProA, kernel Zn)
- Field and storage losses due to pests
- Seed production and distribution issues in GB, Balochistan, Sindh and AJK
- Attractive grain market for maize farmers
- Disease: issue of **mycotoxins**
- Project funding to continue intervention and innovation





# Upcoming emphasis

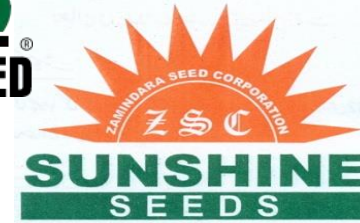
- Capacity building of NARS and seed companies across the maize seed value chain
- Maize travelling seminar
- International maize seed business management training dates will be announced
- Ensuring a continuous flow of improved maize germplasm from various breeding hubs



# Acknowledgments- partners



ICI PAKISTAN



DAG-GB

DAG-AJK

ALI AKBAR  
SEEDS  
PAKISTAN



ARI-Balochistan



ناسکوکا وعدہ پیداوار سب سے زیادہ

HiSell Seeds Plc

MNSUA

UAP

Maxim-Int

CIMMYT<sup>MR</sup>



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## Agricultural Innovation Program (AIP) for Pakistan





**Thank you  
for your  
interest!**