

VONDOZEB, THE MANCOZEB LEADER IN THE PROTECTION OF BANANA CULTIVATION



April 2017

Qualitative Vision

Physical-Chemistry

- Concentration of the active
- Water content
- Suspensibility
- Particle Size
- Dustiness
- Stability

Biological

- Dispersibility
- Rainfastness/
Persistence
- Biological
efficiency

Commercial

- Logistics
-

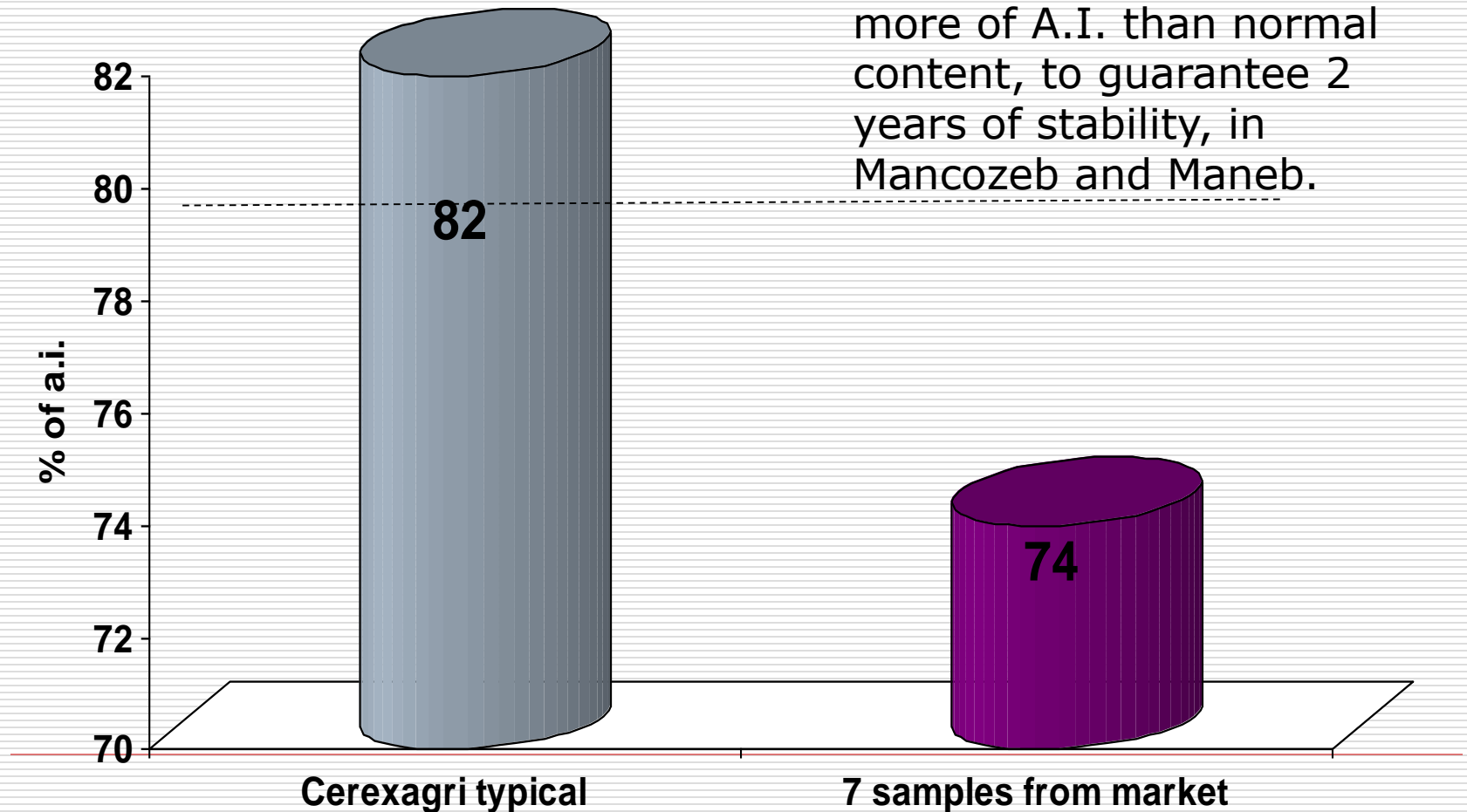
Concentration of A.I.

Active Ingredient Content

- EBDC's: compounds that are not completely stable; slight degradation over time (transport, storage)
 - If the content of A.I. is low, there is risk of ineffectiveness
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Concentration of A.I.

UPL always puts a little more of A.I. than normal content, to guarantee 2 years of stability, in Mancozeb and Maneb.

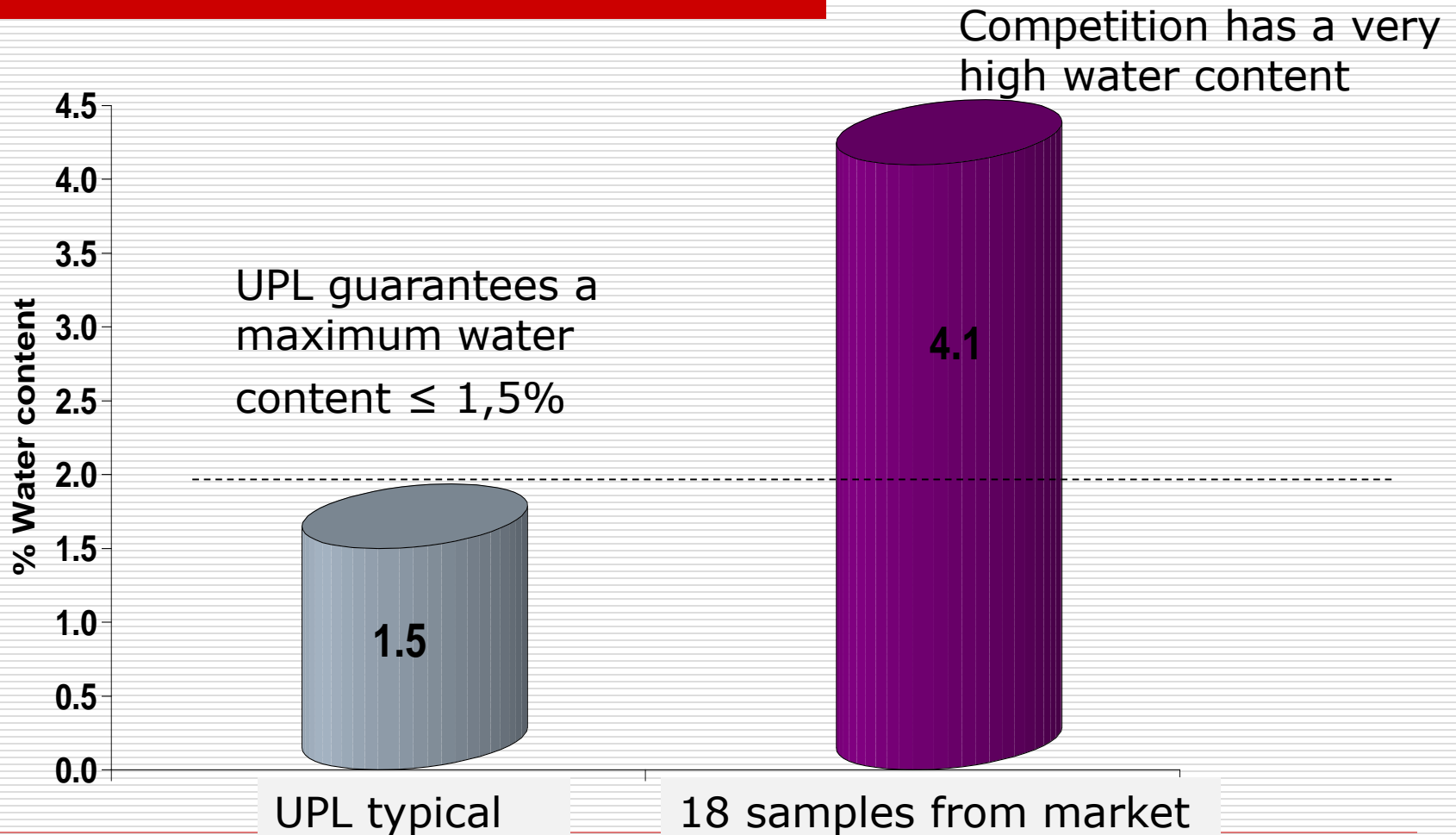


Water content

It is an indicator of the degradation of the product, if the water content is very high ($> 2\%$):

- High humidity level
 - Conservation problems during storage.
-

Water content

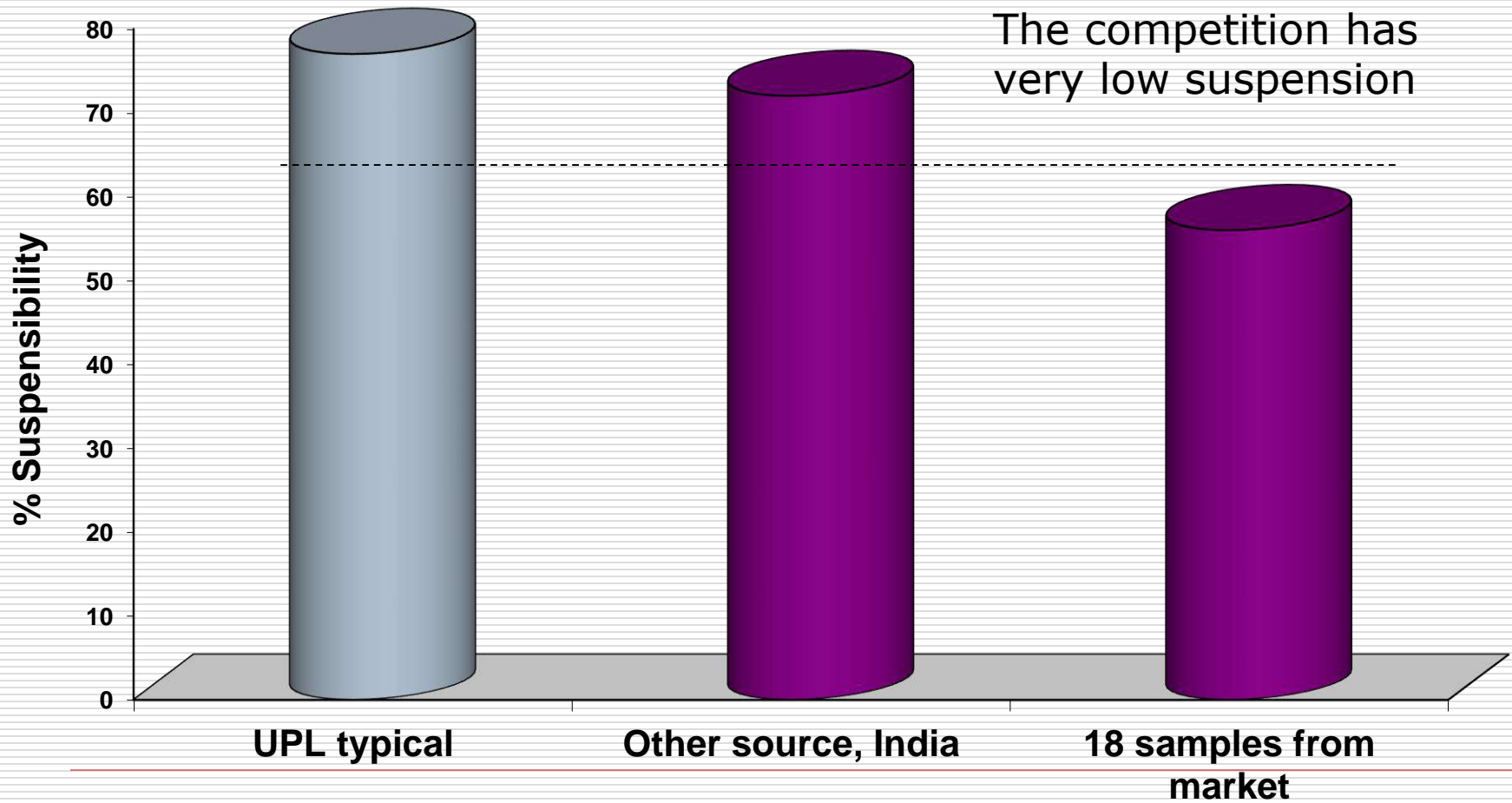


Suspensibility

It is the ability of the product to stay in suspension.

If the suspensibility is very low (<75%) there is a risk of sedimentation of the product. It goes to the bottom of the drums / tanks

Suspensibility



Particle size

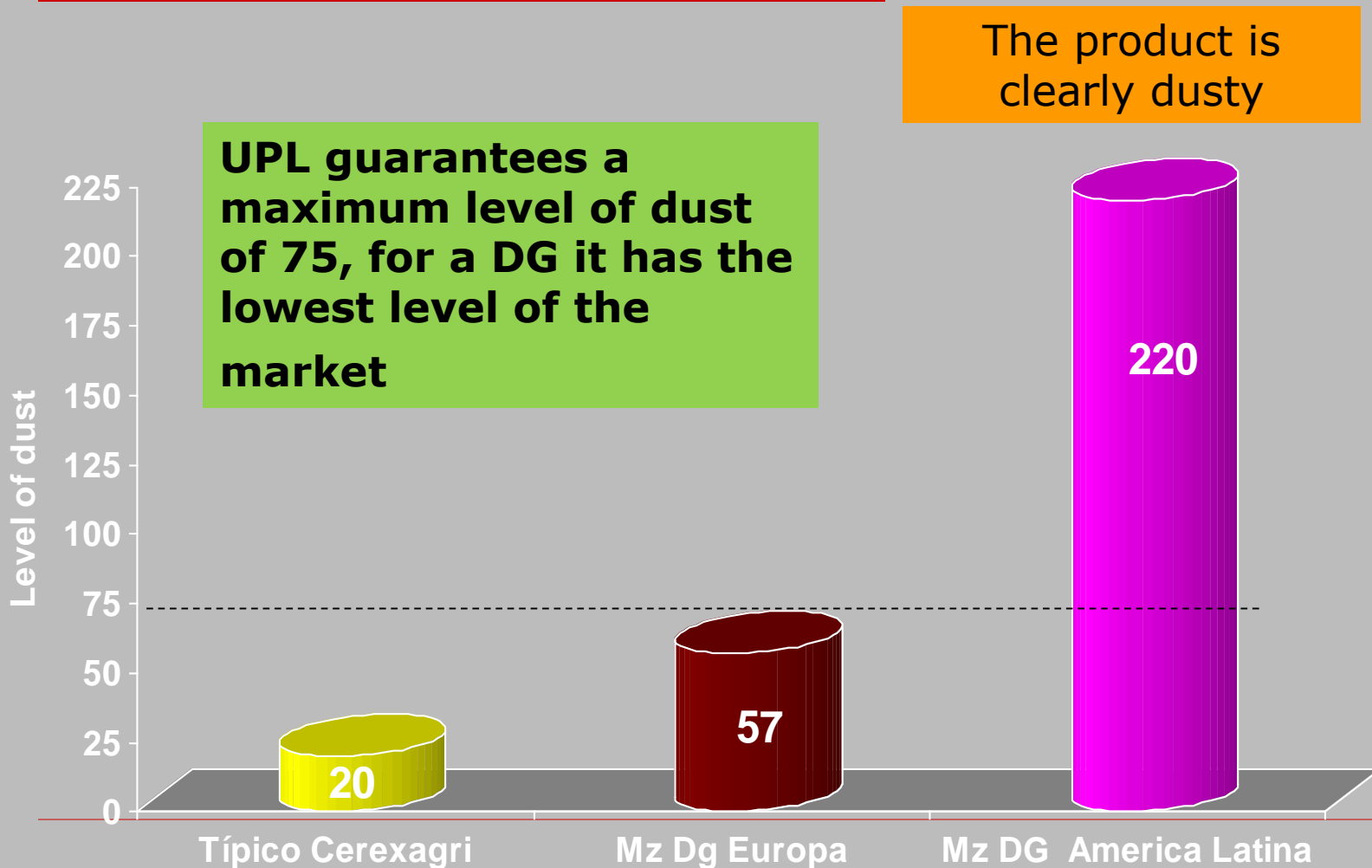


VONDOZEB 75 DG
500 X



VONDOZEB 62 SC(TEC)
<45 MICRAS

Dustiness



Dustiness



SPRAY DRY GRANULATE / GOOD QUALITY

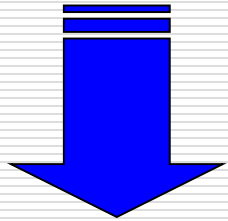


SPRAY DRY GRANULATE / BAD QUALITY

When the particle size (granulometry) is variable it means a high proportion of dust in the formulation

Suspensibility
Ability to pour

Dustiness



Better ability to pour

Water Dispersible Granule (WG)



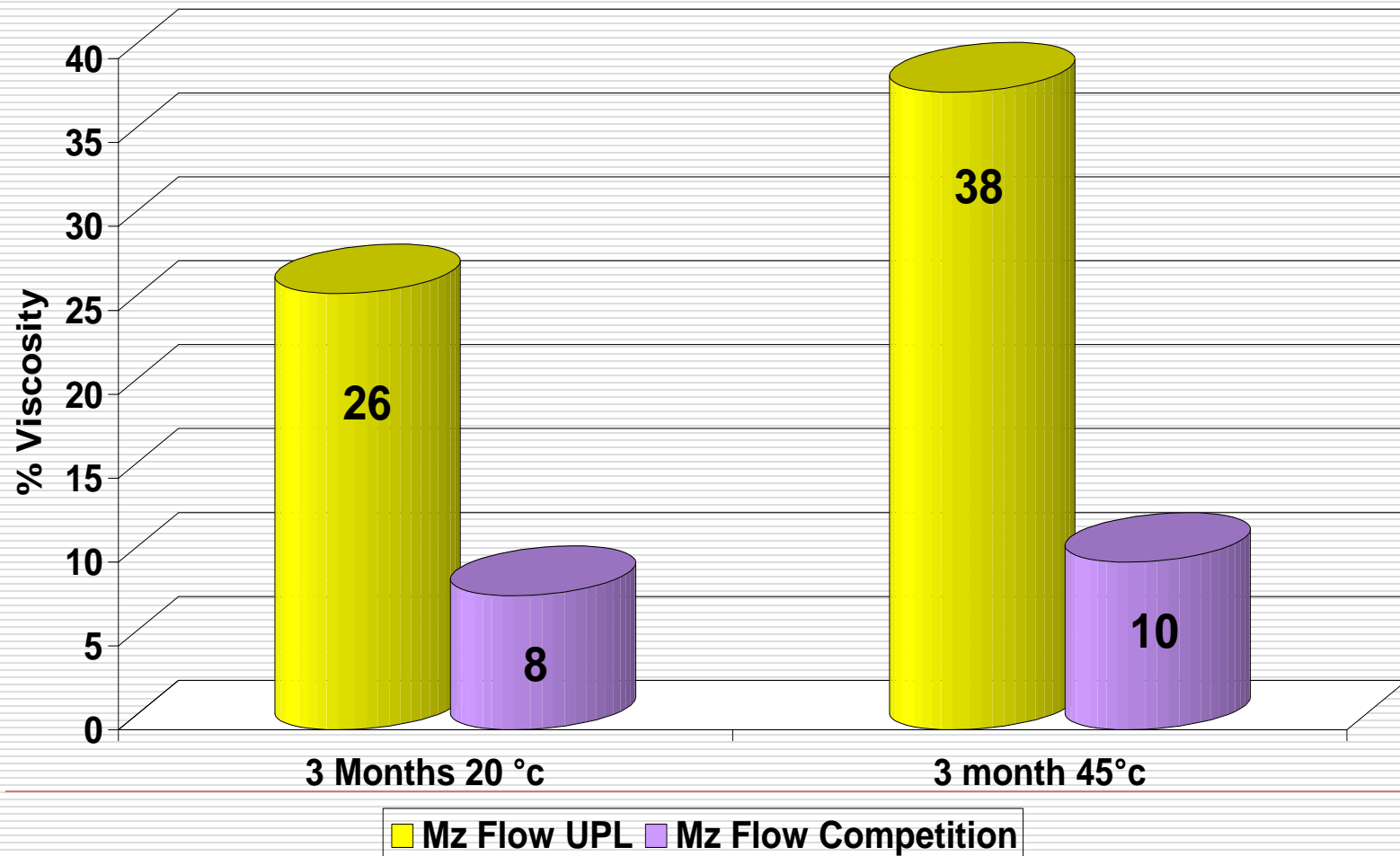
Excellent flow of granules
for a formulation WDG

Stability

Stability for a flowable product:

- Suspensibility: > 90%
 - Viscosity: > 10%
1000 - 1200 ctp
 - Pouring capacity: > 80%
-

Stability



Pourability



Offers the best suspension

- Excellent formulation
- Stock management



Mixtures	Products (l-kg/ha)						
	VZ 62 SC 60 SC	Aceite	Imbirex(0,75%)	Cumora 30 EC	Volle 86 OL	Siganex 60 SC	Impulse 80 EC
VZ 62 SC-2+BIOTRAC(1,0)	2.18	2	0.015				
VZ 62 SC-2+Caltrac(1.0)	2.18	2	0.015				
VZ 62 SC-2+Last N(1,0)	2.18	2	0.015				
VZ 62 SC-2+ZnSO4(0,50)	2.18	2	0.015				
VZ 62 SC-2+ZnSO4(1,0)	2.18	2	0.015				
VZ 62 SC-4+BIOTRAC(1,0)	2.18	4	0.03				
VZ 62 SC-4+Caltrac(1,0)	2.18	4	0.03				
VZ 62 SC-4+Foliales ¹	2.18	4	0.03				
VZ 62 SC-4+Foliales ²	2.18	4	0.03				
VZ 62 SC-4+Last N(1,0)	2.18	4	0.03				
VZ 62 SC-4+ZnSO4(0,50)	2.18	4	0.03				
VZ 62 SC-4+ZnSO4(1,0)	2.18	4	0.03				
VZ 62 SC-8+Cumora	1.69	8	0.06	0.30			
VZ 62 SC-8+Impulse	1.69	8	0.06				0.4
VZ 62 SC-8+Siganex	1.69	8	0.06			0.5	
VZ 62 SC-8+Volley	1.69	8	0.06		1		
VZ 62 SC-9	2.18	9	0.07				

Stability

Mixtures with Vondozeb 62 SC
and its compability 2014-2017



Products	Stability in minutes			Ph	Clasificación
	0	30	60		
VZ 62 SC-4+Foliales ¹	ok	ok	ok	5.64	Estable-perfecta
VZ 62 SC-8+Cumora	ok	ok	ok	6.57	Estable-perfecta
VZ 62 SC-4+Foliales ²	ok	ok	ok	5.71	Estable-perfecta
VZ 62 SC-8+Volley	ok	ok	ok	6.71	Estable-perfecta
VZ 62 SC-9	ok	ok	ok	6.46	Estable-perfecta
VZ 62 SC-8+Siganax	ok	ok	ok	6.62	Estable-perfecta
VZ 62 SC-8+Impulse	ok	ok	ok	6.88	Estable-perfecta
VZ 62 SC-2+Caltrac	ok	ok	ok	6.72	Estable-perfecta
VZ 62 SC-4+Caltrac	ok	ok	ok	6.71	Estable-perfecta
VZ 62 SC-2+ZnSO4(0,50)	ok	ok	ok	6.07	Estable-perfecta
VZ 62 SC-4+ZnSO4(0,50)	ok	ok	ok	6.03	Estable-perfecta
VZ 62 SC-2+ZnSO4(1,0)	ok	ok	ok	5.85	Estable-perfecta
VZ 62 SC-4+ZnSO4(1,0)	ok	ok	ok	5.93	Estable-perfecta
VZ 62 SC-2+Last N(1,0)	ok	ok	ok	6.99	Estable-perfecta
VZ 62 SC-4+Last N(1,0)	ok	ok	ok	6.96	Estable-perfecta
VZ 62 SC-2+BIOTRAC(1,0)	ok	ok	ok	6.36	Estable-perfecta
VZ 62 SC-4+BIOTRAC(1,0)	ok	ok	ok	6.34	Estable-perfecta

Stability Evaluation of the mixtures, 2016



+ Sistemic fungicides



+ Foliar fertilizers

Stability

Evaluation of the mixtures, 2016



Vondozeb 62
SC-1.94 + Oil-4

Banazeb 60 SC-
2.0 + Oil-4

Vondozeb 62
SC-2.18 + Oil-4

Banazeb 60 SC-
2.25 + Oil-4

Mejor perfil



Mezcla
30
minutos

Mejor perfil



Mezcla
30
minutos

Mezcla
30
minutos



Coromandel
Technical Source



Coromandel
Technical Source

Stability Evaluation of the mixtures, 2016



Vondozeb 62 SC-1.94 + Oil-7

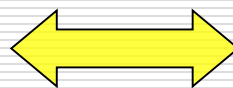
Banazeb 60 SC-2.0 + Oil-4



Stability



Floatable formulation of mancozeb with sediment problems



Low viscosity
Low suspensibility

Stability: Conclusion

Vondozeb has demonstrated:



- Excellent physical properties in terms of suspensibility, viscosity, flowability and compatibility with other fungicides.
 - There is no risk of sedimentation with the current storage system
-

Dispersability

Objective:

Coalescence
of drops

100%

COVERAGE



The dispersion of the product on the surface of the leaf is a critical aspect in the use of protectors.

It depends on:

- ✓ Compatibility of the formulation with the polarity of the surface of the film
- ✓ Capacity of the formulation to extend in the maximum leaf area.
- ✓ Miscibility in emulsions

Dispersability

Vondozeb formulations offer the best dispersion in the leaves in two ways:

- Formulation in oil with excellent diffusion of drops in the leaf.
- Dry formulation that offers a high number of drops which means a 100% coverage on the leaf

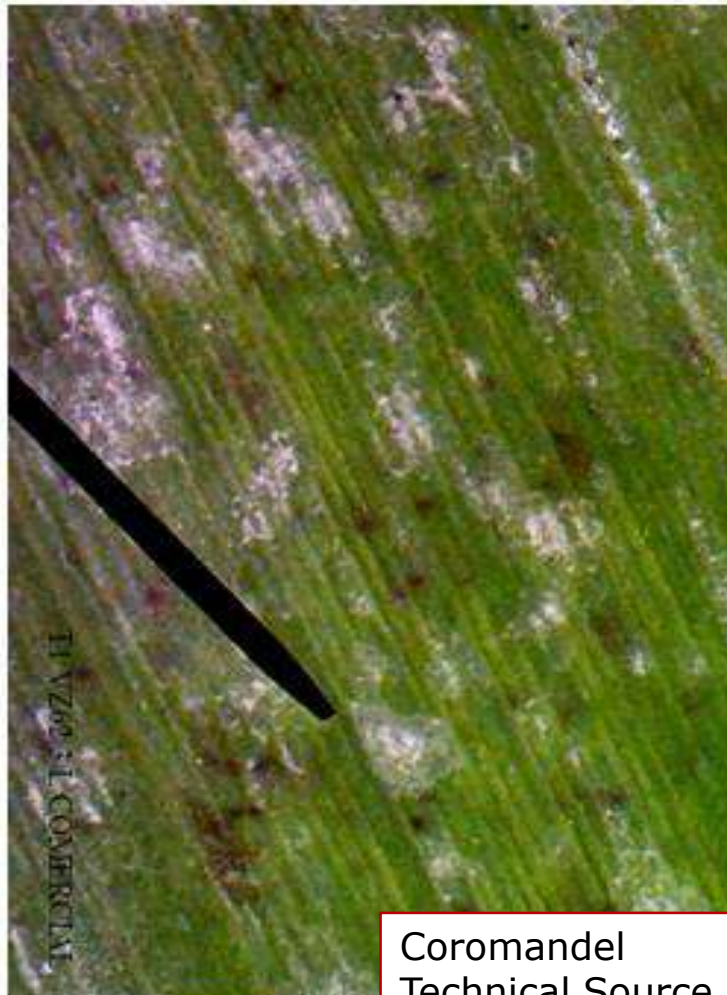
THE BEST PROTECTION



Rainfastness

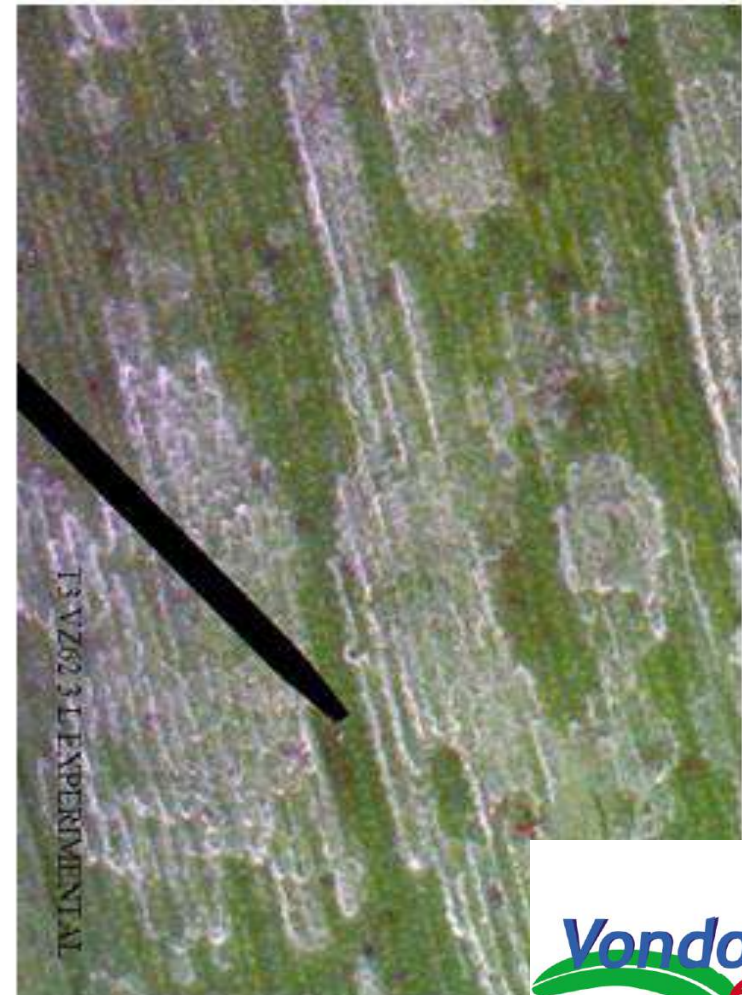
Dispersion on the banana leaf exposed to 127 mm of simulated rainfall
(46x magnification)

BANAZEB 60 SC+3 L AC



Coromandel
Technical Source

VONDOZEB 62 SC+3 L AC

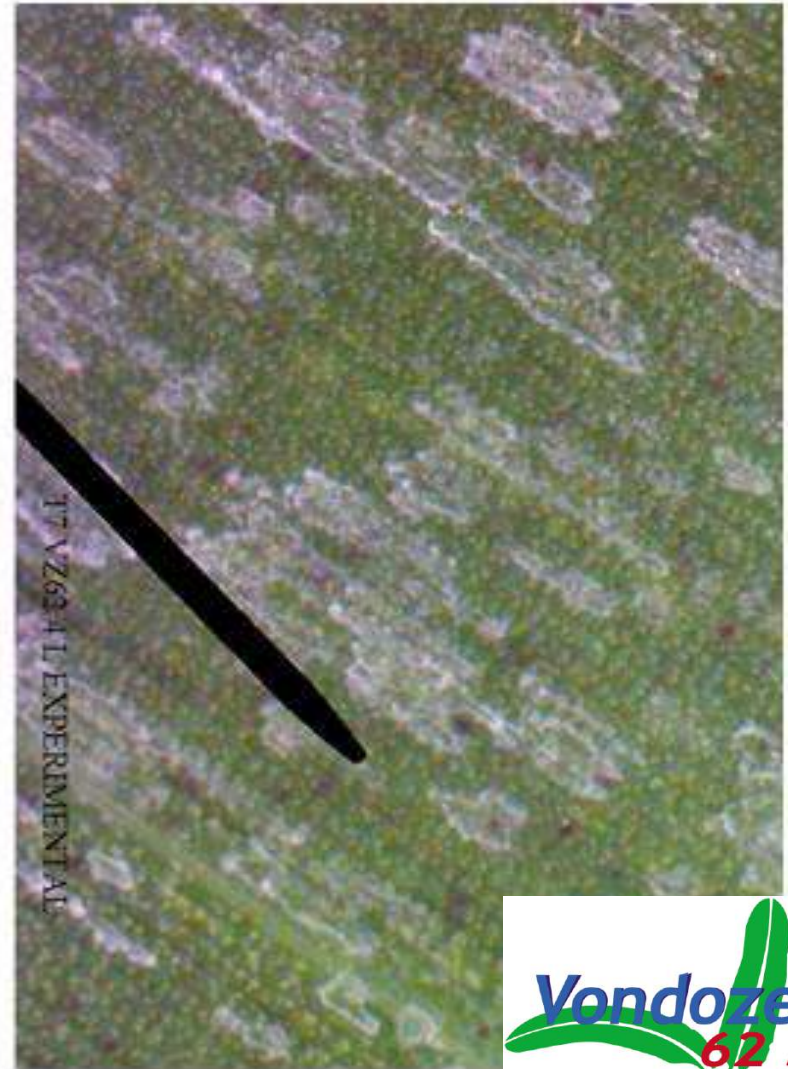


Rainfastness

Dispersion on the banana leaf exposed to 127 mm of simulated rainfall
(46x magnification)

BANAZEB 60 SC+4 L AC

VONDOZEB 62 SC+4 L AC



Coromandel
Technical Source



Rainfastness

Dispersion on the banana leaf exposed to 127 mm of simulated rainfall (46x magnification)

BANAZEB 60 SC+7 L AC

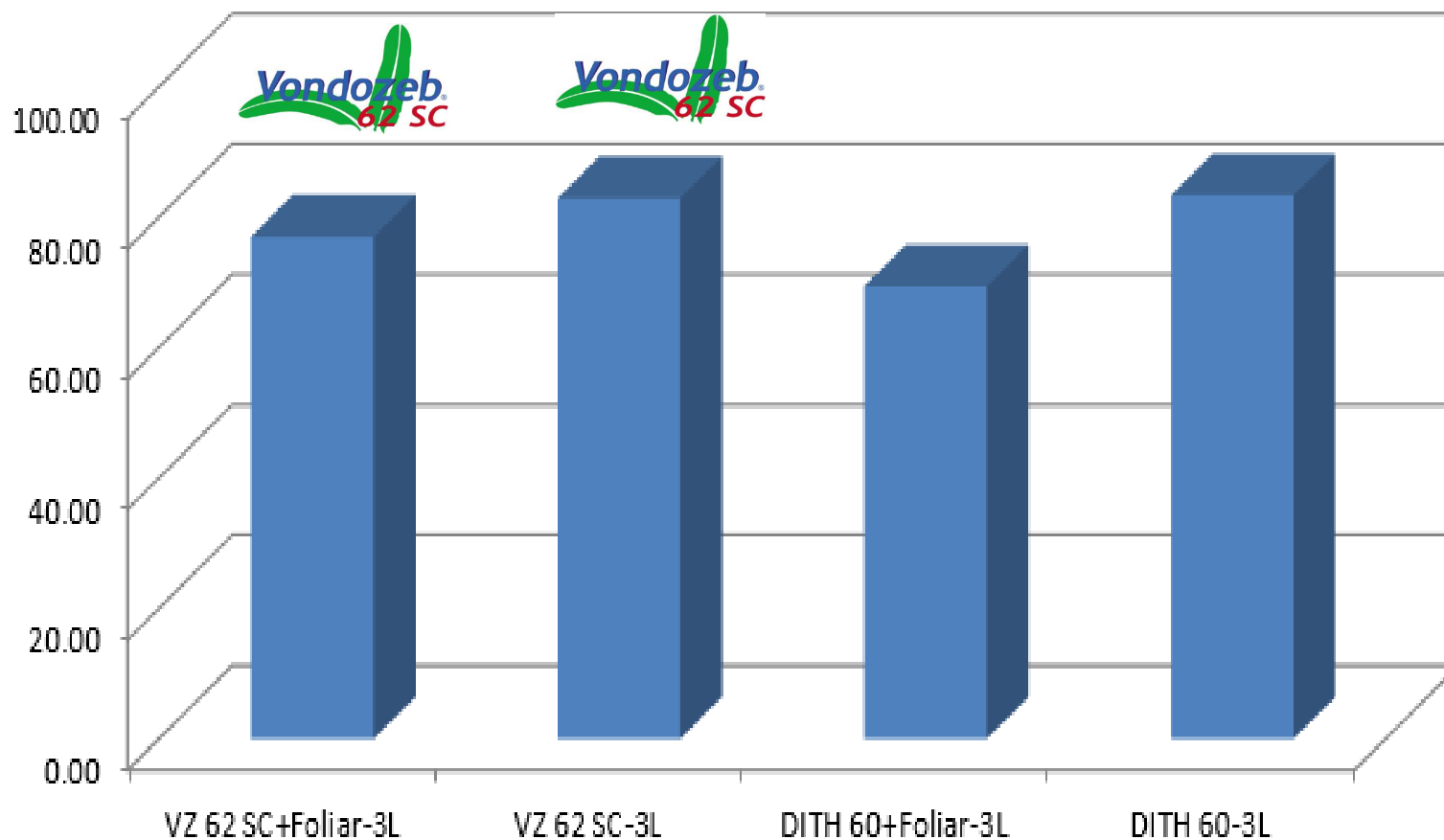


Coromandel
Technical Source

VONDOZEB 62 SC+7 L AC



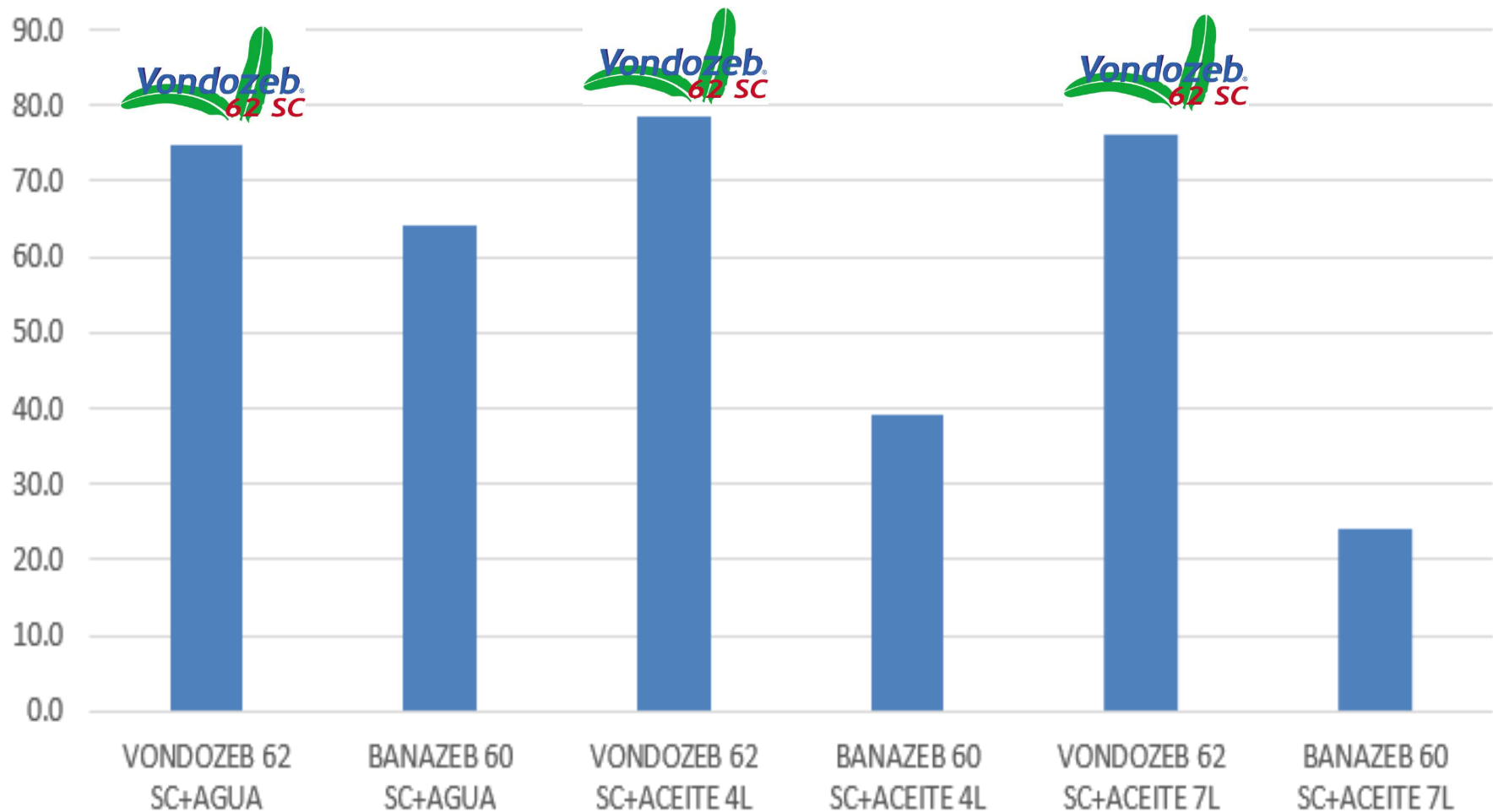
Persistence Percentage Test with 3-inch simulated rainfall in banana leaf, July 2014



Rainfastness



Persistence Percentage Test with 5-inch simulated rainfall in banana leaf, October 2014



Biological efficacy: In-vitro

Trat 1: Vondozeb 62 SC (2.18) + Oil-3

Treatment 1	% Germination
Germination of spores <i>M. fijiensis</i> R1	7
Germination of spores <i>M. fijiensis</i> R2	3
Germination of spores <i>M. fijiensis</i> R3	5
Germination of spores <i>M. fijiensis</i> R4	2
Average <i>M. fijiensis</i> spore germination	4.25



Trat 2: Vondozeb 62 SC (2.18) + Oil-3 + Foliar

Treatment 2	% Germination
Germination of spores <i>M. fijiensis</i> R1	7
Germination of spores <i>M. fijiensis</i> R2	11
Germination of spores <i>M. fijiensis</i> R3	7
Germination of spores <i>M. fijiensis</i> R4	6
Average <i>M. fijiensis</i> spore germination	7.75



Trat 6: Dithane 60 SC (2.25) + Oil-3

Treatment 6	% Germination
Germination of spores <i>M. fijiensis</i> R1	15
Germination of spores <i>M. fijiensis</i> R2	9
Germination of spores <i>M. fijiensis</i> R3	0
Germination of spores <i>M. fijiensis</i> R4	0
Average <i>M. fijiensis</i> spore germination	6

Commercial - Logistics



Experiences 2017:

-
- Outstanding Delivery time
 - Value added... Customer Service/Field Development/ **TO SELL CONTROL**
 - Post sales service... STEWARSHIP
 - Preventive maintenance of the equipment
 - Formulation quality control:
 - ISO 14001 / Good Operational Practices Certified
-

Commercial – Logistics

Certificado

Declaramos para los fines necesarios que la empresa:

UPL Costa Rica SA

Esta registrada en nuestra base de datos mundial con
Numero D-U-N-S

85-309-2695

30 de Mayo de 2014



Decide with Confidence

Para mayor información accesea la base de datos de Dun&Bradstreet y/o contáctenos

El hecho de que una empresa esté registrada en la base de datos de D&B no significa que un crédito o cualquier otra transacción debe ser aprobada, rechazada, limitada o postergada. Solamente significa que existen datos suficientes para asignarle un Número D-U-N-S

El número D-U-N-S es permanente en la base de datos de D&B, sin embargo, la información contenida en el reporte tiene una vigencia de un año a partir de la fecha de actualización

E-mail: csoff800@dnb.com

**DE CERTIFICADO
DE REGISTRO DE
GESTIÓN AMBIENTAL**

SGA-005/01/2001

El Instituto de Normas Técnicas de Costa Rica, INTECO, certifica que el Sistema de Gestión Ambiental administrado por la Empresa Industrial Química de Costa Rica, S.A. (IQUICSA) cumple con los requisitos del Sistema de Gestión Ambiental según lo establecido en la Ley.

FORMULACIONES QUÍMICAS, S.A.

Para:

FORMULACIÓN DE PRODUCTOS FITOSANITARIOS
PHYTOSANITARY PRODUCTS FORMULATION

NOTA: En caso de duda siempre prevalecerá el idioma en español.

que operará en las instalaciones ubicadas en:

BARRIO DENT, SAN PEDRO DE MONTES DE OCA, SAN JOSÉ

se certifica con los requisitos de la Norma INTECO 18201:1993, Sistema de Gestión Ambiental- Requisitos con guía para pequeñas y medianas empresas y de la Norma INTECO 18202:2008, Environmental Management System-Requirements for small and medium enterprises.

El presente certificado es válido salvo suspensión o ser revocado por INTECO
The Certificate is valid unless it is suspended or revoked by INTECO's environmental system.

Fecha de emisión: 30/05/2014
Fecha de:



Director Ejecutivo de INTECO
Executive Director of INTECO

Fecha de vigencia: 30/05/2015
Fecha de:



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iThank you!
