

Hi-Wett® super-spreader

**“Making every drop work –
where you want it”**



Hi-Wett[®] and Hi-Wett Xtra will deliver:

lower application volumes
for your spray program

- equal or better pest & disease control
- equal or lower cost
- more acres sprayed per day
- more area covered between rain
- shorten spray intervals for growth/weather
- conserve water
- operational flexibility

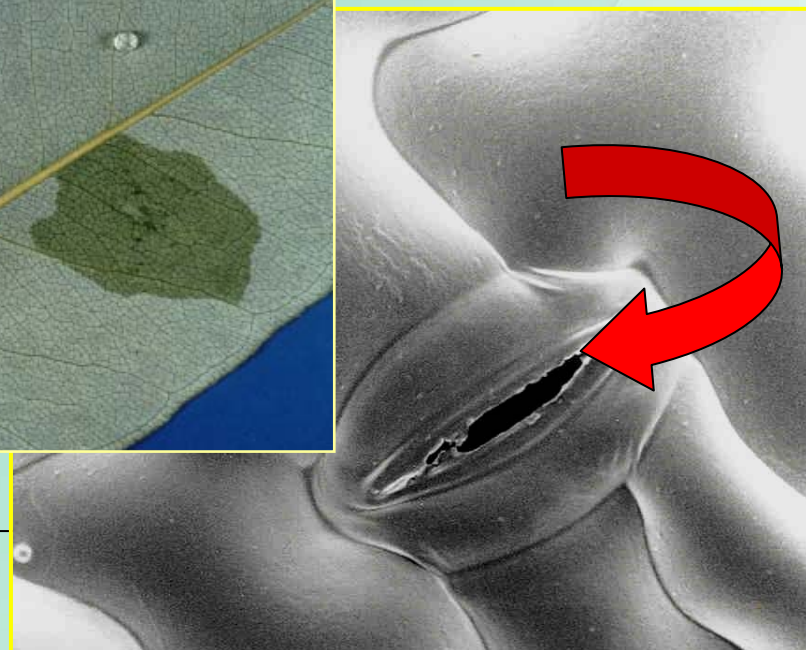
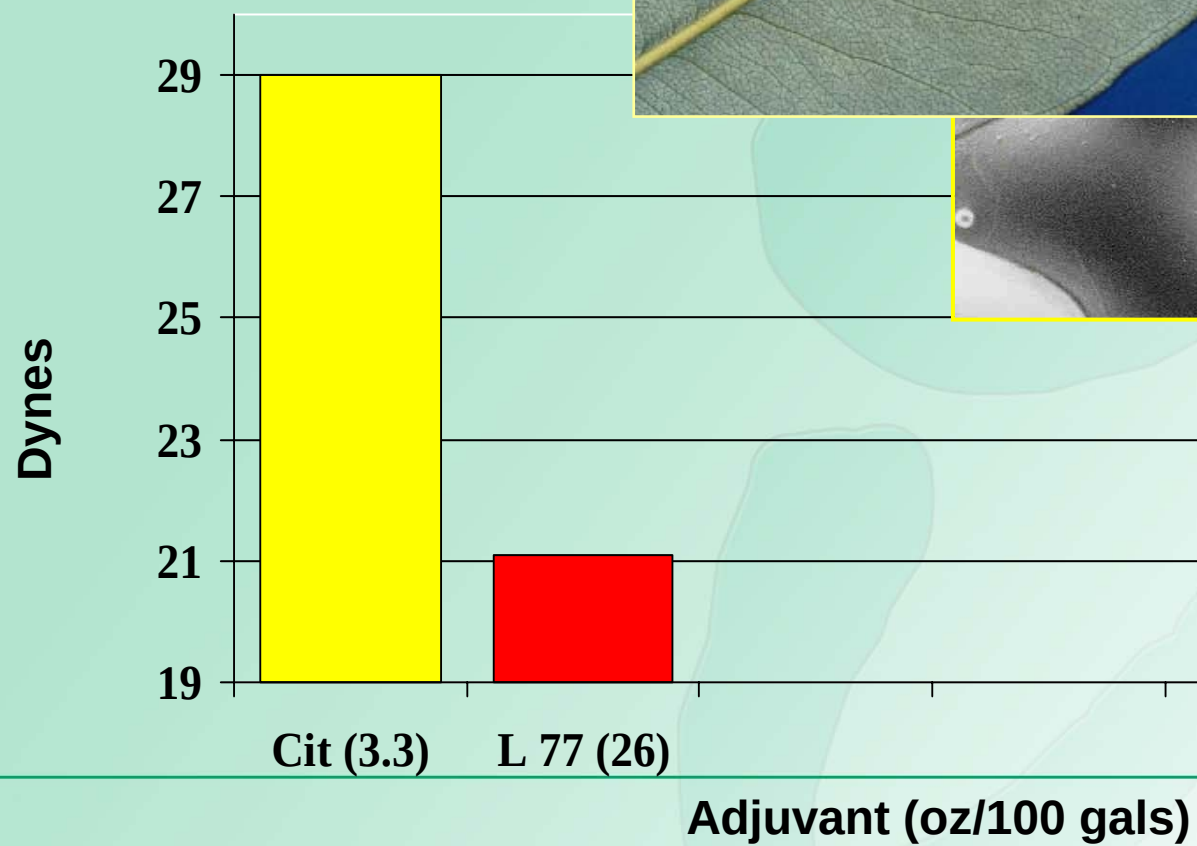


What is Hi-Wett?

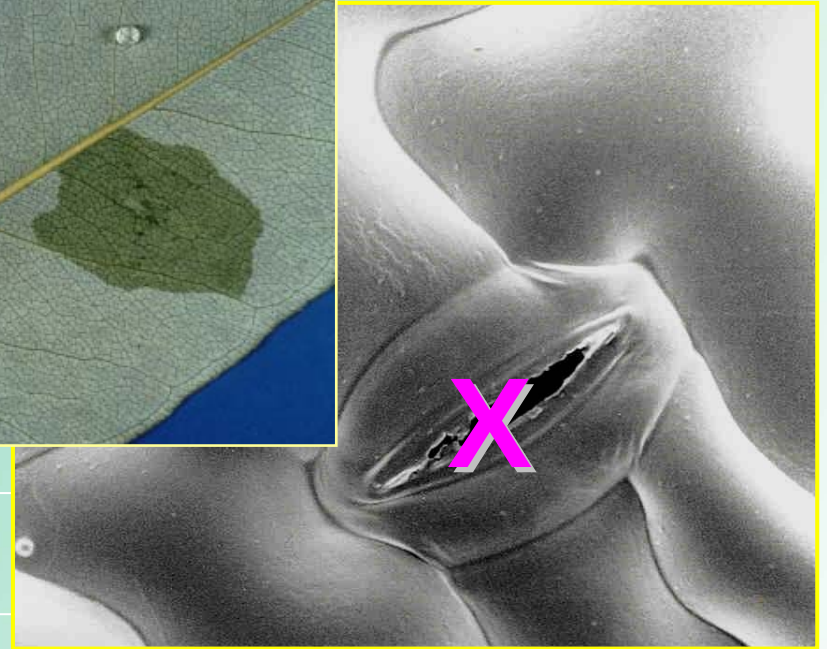
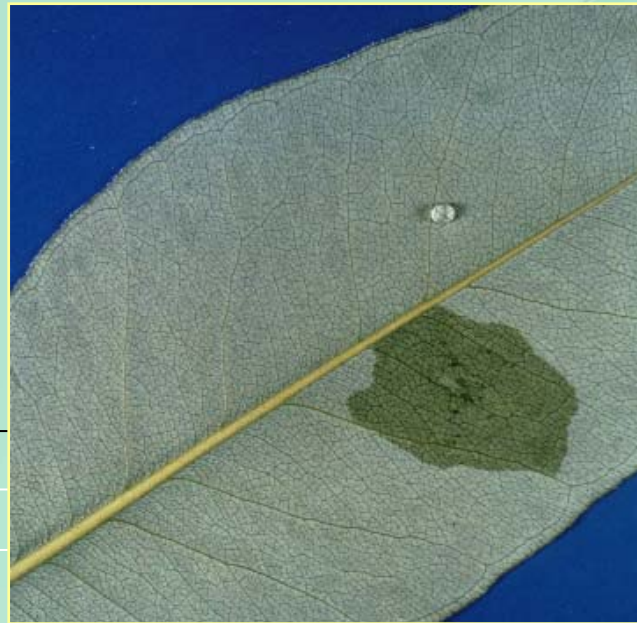
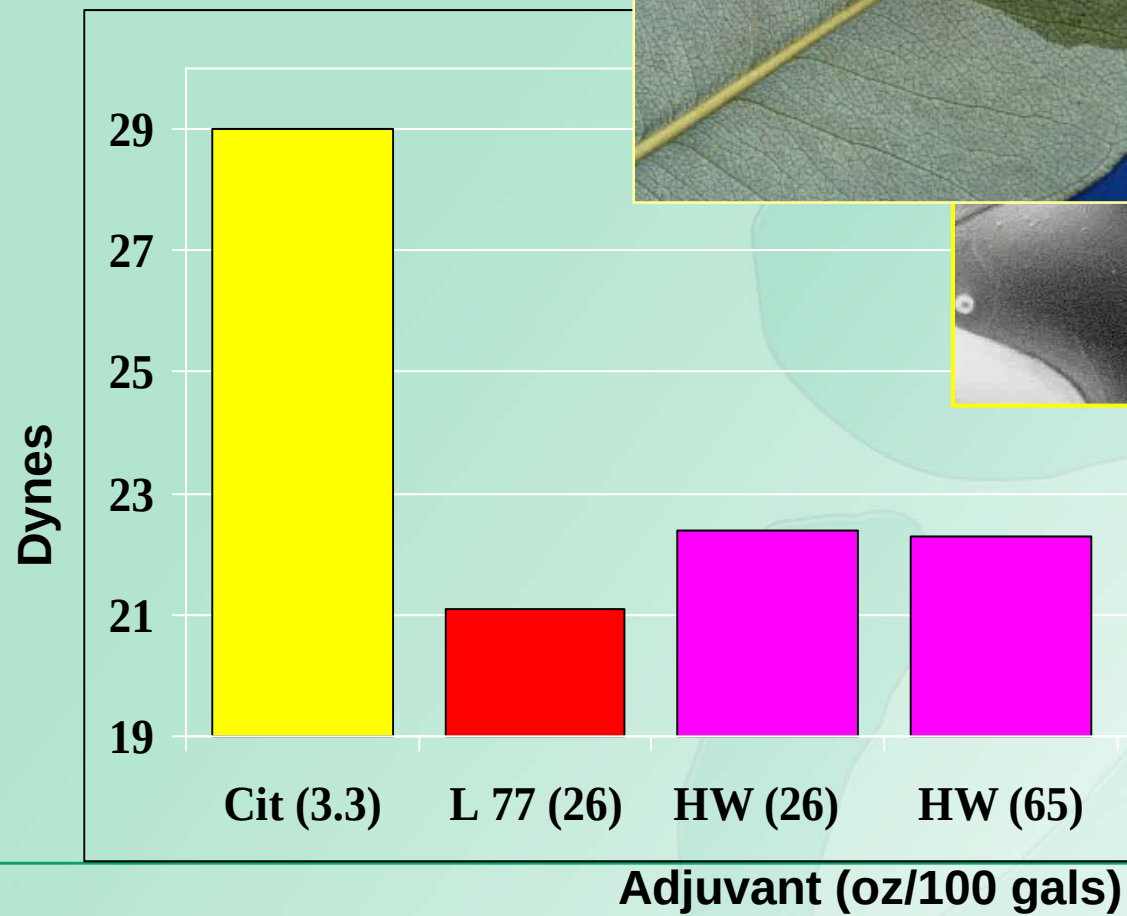
**Hi-Wett is a new generation organosilicone
blend super-spreader specifically
designed for use with crop protection
products**



Surface tensions of surfactants



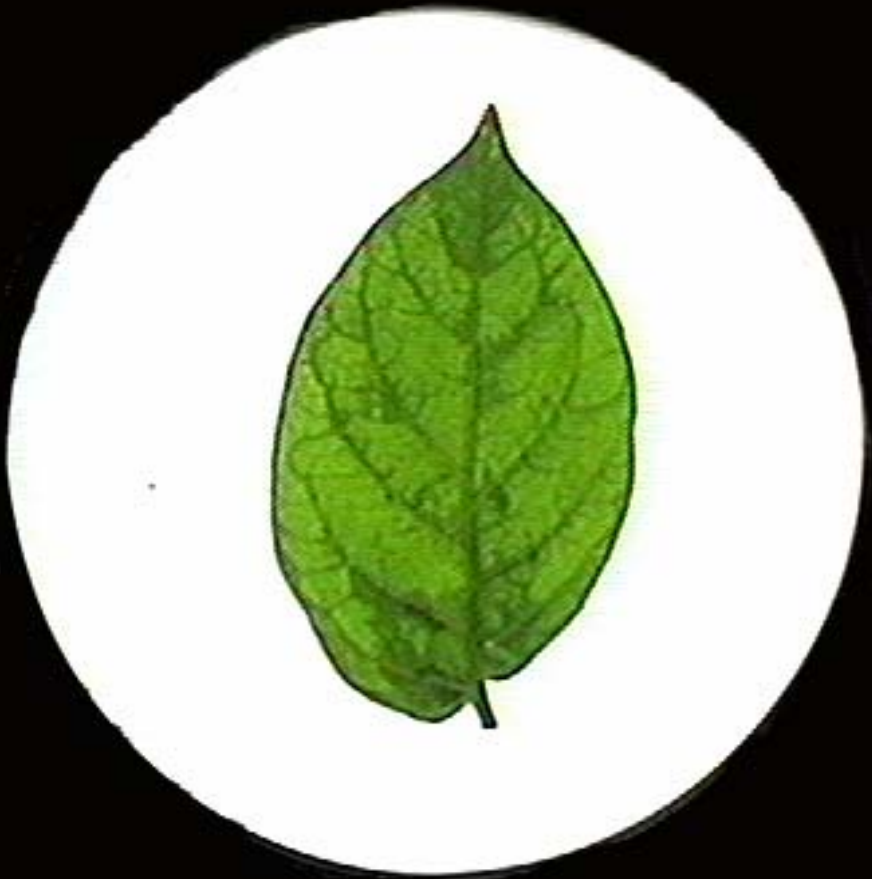
Surface tensions of surfactants



**Stomatal infiltration - 5 mins
(at 65 oz/100 gallons)**

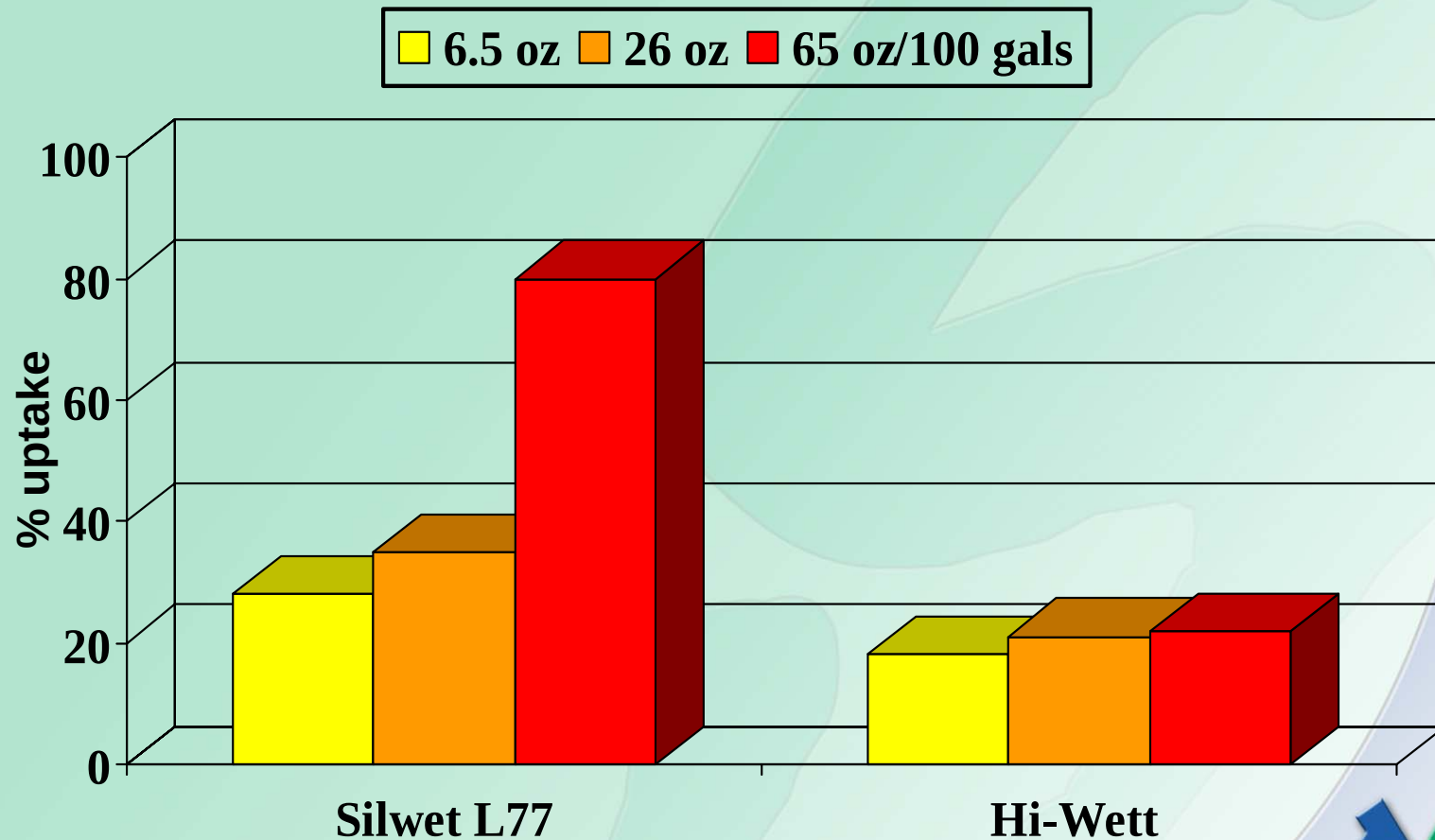


Hi-Wett®



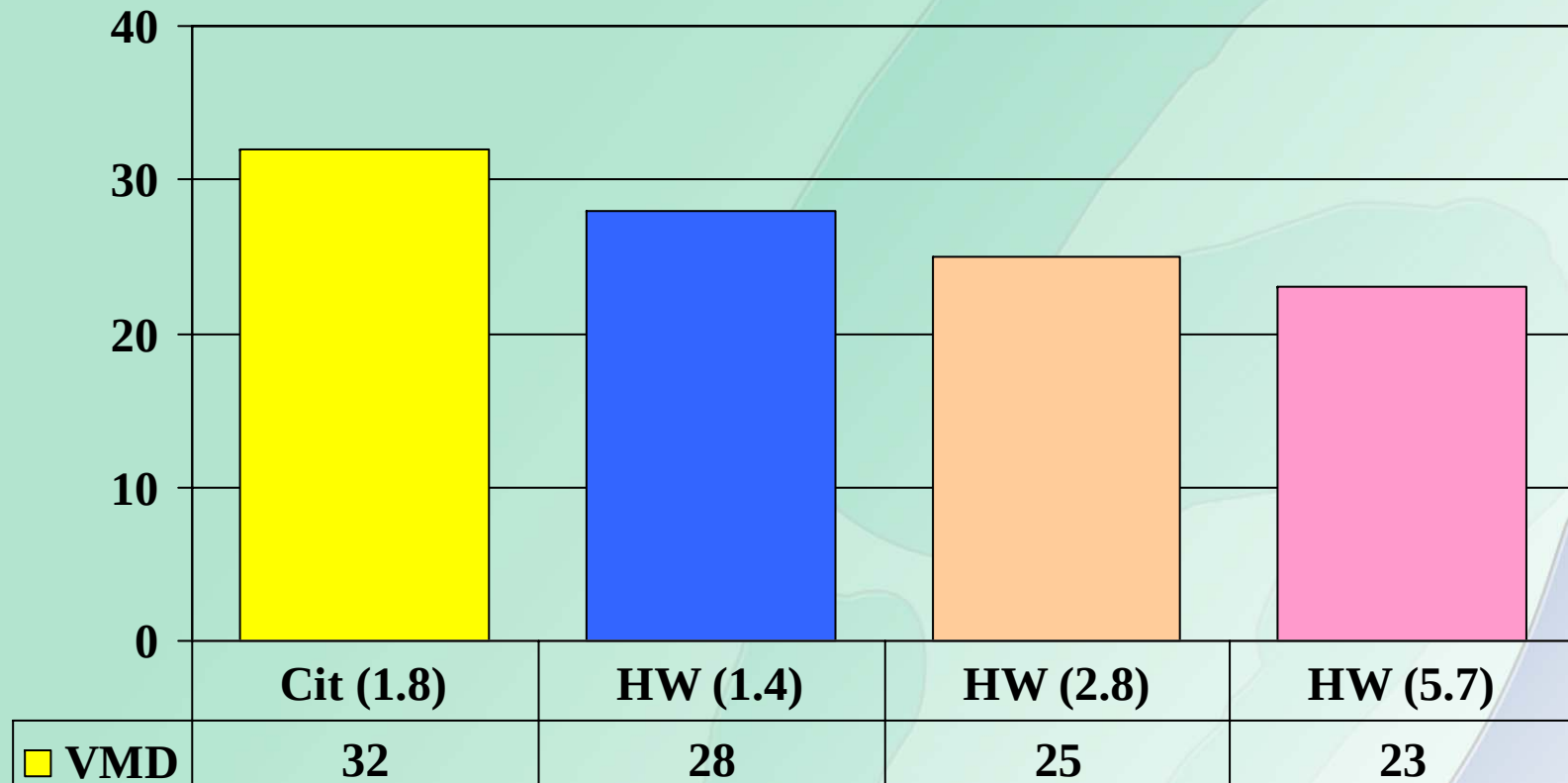
Silwet® L77

Stomatal uptake into leaves 21 gallons/acre

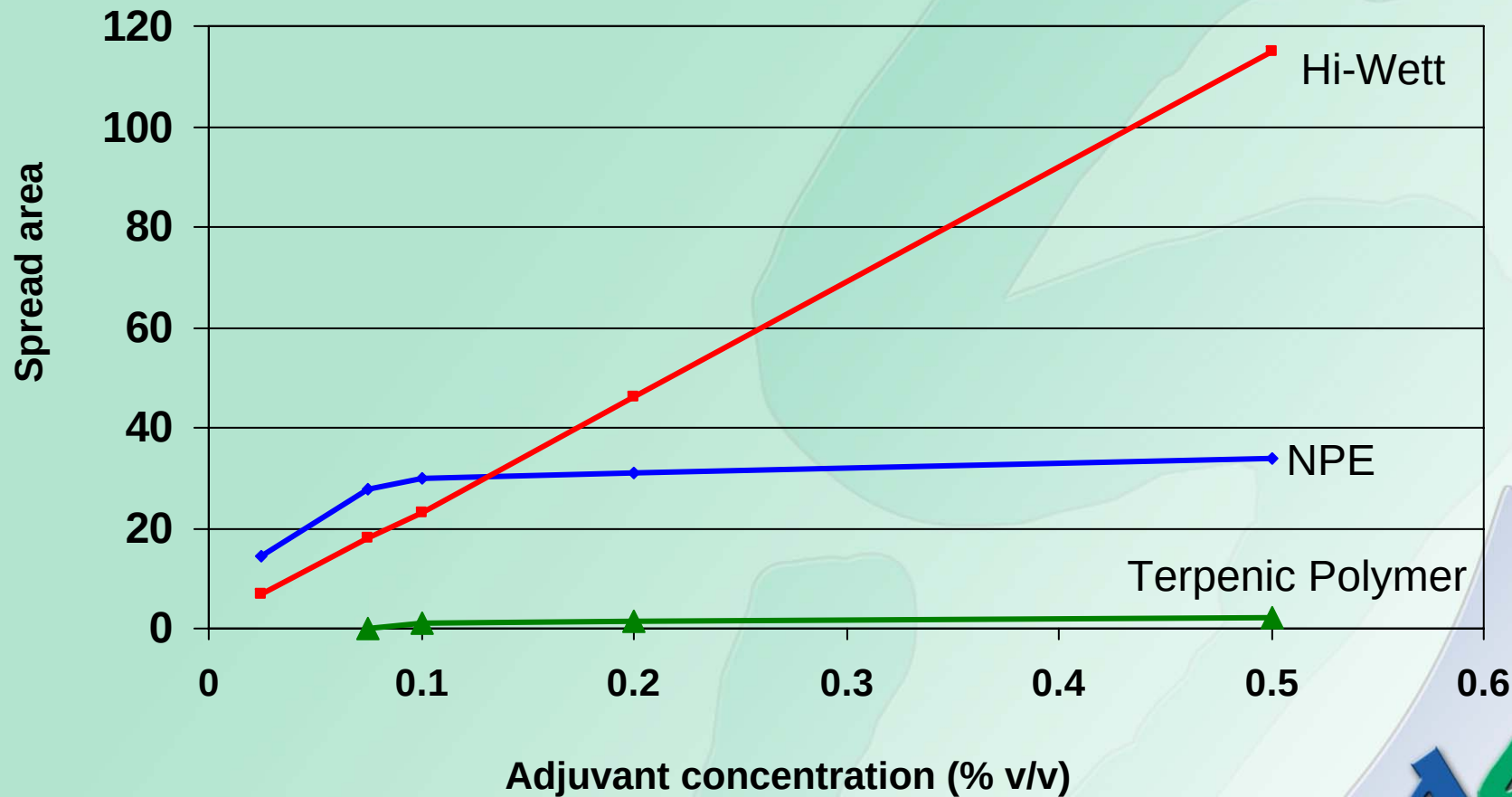


Hi-Wett – effect on drift

Percent driftable fines (<150µ)



Performance of wetters & spreaders: spreading of Manzate (2.7 lbs/acre) on waxy leaf surface



Hi-Wett® Super-spreader, Hi-Wett Xtra Super-spreader/sticker

Suggested dose rate table for **GRAPES**

Approx. rate of **Hi-Wett** in fl.ozs/acre with multi-mixtures

Target	Total pints and pounds of product in mix per acre								
	1	2	3	4	5	6	7	8	9 +
Foliage	2.4	2.4	3.2	3.2	4	4	4.8	4.8	5.6
Bunches	6.4	6.4	6.4	7.2	8	8	8.8	8.8	9.6

NOTES:

1. Substitute **Hi-Wett Xtra** for **Hi-Wett** if rain is expected within 5 days. Use double the chart rates for **Hi-Wett Xtra**.
2. Do not use the above rates for **Hi-Wett** or **Hi-Wett Xtra** in high water rates (over 50 gals/acre) as run-off may occur

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Hi-Wett[®] Super-spreader, **Hi-Wett Xtra** Super-spreader/sticker

Suggested Dose Rate Table

Approx. Rate of **Hi-Wett** in fl. ozs / acre with multi-mixtures

Crop	Total pints and pounds of product in mix per acre								
	1	2	3	4	5	6	7	8	9
Onions	3.2	3.2	4	4.8	6	7.2	8	8.8	9.6
Potatoes	1.6	2	3	4	4.8	5.2	5.6	6	6.4

NOTES

- Substitute **Hi-Wett Xtra** for **Hi-Wett** when rainfast properties are required. Use double the rates for **Hi-Wett Xtra**
- Do not use **Hi-Wett** or **Hi-Wett Xtra** on these crops in water rates above 50 gallons/acre as run-off may occur



Hi-Wett® Super-spreader

Suggested dose rate table – Squash/Pumpkins

Approx. rate of **Hi-Wett** in fl. ozs. per acre with multi-mixtures

Target	Total pints or pounds of product in mix per acre								
	1	2	3	4	5	6	7	8	9+
Squash/Pumpkins	2.4	2.4	3.2	3.2	4	4	4.8	4.8	5.6

NOTES

- Substitute **Hi-Wett Xtra** for **Hi-Wett** when rainfast properties are required. Use double the rates for **Hi-Wett Xtra**
- Do not use **Hi-Wett** or **Hi-Wett Xtra** on these crops in water rates above 50 gallons/acre as run-off may occur



Hi-Wett® Super-spreader, Hi-Wett® Xtra Super-spreader/sticker

Suggested dose rate table – APPLES

Approx. rate of **Hi-Wett** in fl. ozs / acre with multi-mixtures

Crop	Total pints and pounds of product in mix per acre								
Apples	1	2	3	4	5	6	7	8	9+
Full Season	3.2	3.2	3.2	3.2	4	4	4.8	4.8	5.6

NOTES

- Substitute **Hi-Wett Xtra** for **Hi-Wett** when rainfast properties are required. Use double the rates for **Hi-Wett Xtra**
- Do not use **Hi-Wett** or **Hi-Wett Xtra** on these crops in water rates above 50 gallons/acre as run-off may occur

Hi-Wett in Apples

- **Demonstration held in Prosser, WA in April 2005**
- **Equipment was a new Quantum Mist 8 head sprayer**
- **Water volumes tested were 200 GPA, 100 GPA, 50 GPA, 50 GPA + Hi-Wett and 25 GPA + Hi-Wett**
- **Surround was used in all treatments at 18 lb/acre**





25+HW 50+HW 50 100 200

**All treatments were 18 lbs
Surround per acre**

New Zealand Apple Comparison

100 GPA with no Hi-Wett



40 GPA + Hi-Wett



Surround fruit spotting



Surround results

Sunburn

- Untreated-----8%
- Surround 100 gpa-No Hi-Wett----1.7%
- Surround 40 gpa + Hi-Wett----- 1.2%

Spotting on Fruit

- Surround 100 gpa-No Hi-Wett-----5%
- Surround 40 gpa + Hi-Wett-----0.5%

Summary of pest and disease incidence between SO and LVA programmes

Mean data presented with LVA as percentage of SO
(5 split blocks)

ALCM - at thinning	LR fruit at harvest	WAA fruit at harvest	CM fruit stings at harvest	Noctuid fruit damage at harvest
93%	40%	33%	33%	131%

Shoot BS at thinning	Fruit BS at thinning	Fruit BS at harvest	PM on shoots
46%	35%	42%	82%

SUMMARY OF FRUIT RESIDUE PROFILE (AT WITH-HOLDING PERIOD)

WHP residues are means of all 5 studies

CHEMICAL	LEVEL AT WITHHOLDING PERIOD (ppm)	MAX / MIN Mean Residue (ppm)	PESTICIDE REDUCTION (%)	NZ/AUST MRL (ppm)	PERCENT OF MRL
<u>Captan (21 DAT)</u>					
Standard Orchard	0.19	0.30 / 0.10	-	10.0	1.9
LVA	0.16	0.29 / 0.05	16	10.0	1.6
<u>Dodine (14 DAT)</u>					
Standard	0.44	0.70 / 0.26	-	2.0	22.0
LVA	0.42	0.75 / 0.20	5	2.0	21.0
<u>Tebufenozide (14 DAT)</u>					
Standard	0.17	0.32 / 0.02	-	0.5	34.0
LVA	0.13	0.31 / 0.01	24	0.5	26.0

Residues



Have been either reduced or unaffected (multi-residue analysis) in a variety of crops in full season commercial programs (scientific studies):

**Potatoes (1 study)
Apples (multiple studies)
Grapes (5 varieties)
Kiwifruit (1 study)**

Hi-Wett

No adverse effects on
crop quality or yield
in 4 years of use:



apples*
grapes*
potatoes*
onions
citrus
kiwifruit
Cabbage
avocados*

carrots
amenity trees
broccoli
cabbage
turf grass
lettuce
cucurbits

* trials where crop quality have been scientifically assessed



PHYTOTOXICITY, RESIDUES and WINE

- **Multi-residue screen - no effects**
- **Phytotoxicity on five varieties - no effects**
- **Micro-vinification (fermentation/taste)**
4 varieties - no effects



New Zealand Grape Comparison

42 GPA with no Hi-Wett



42 GPA + Hi-Wett



AST
Applied spray
Technologies

New Zealand Grape Comparison

**42 GPA Plucked
with no Hi-Wett**



**42 GPA Plucked +
Hi-Wett**



AST
Applied spray
Technologies

New Zealand Grape Comparison

21 GPA with no Hi-Wett



21 GPA + Hi-Wett

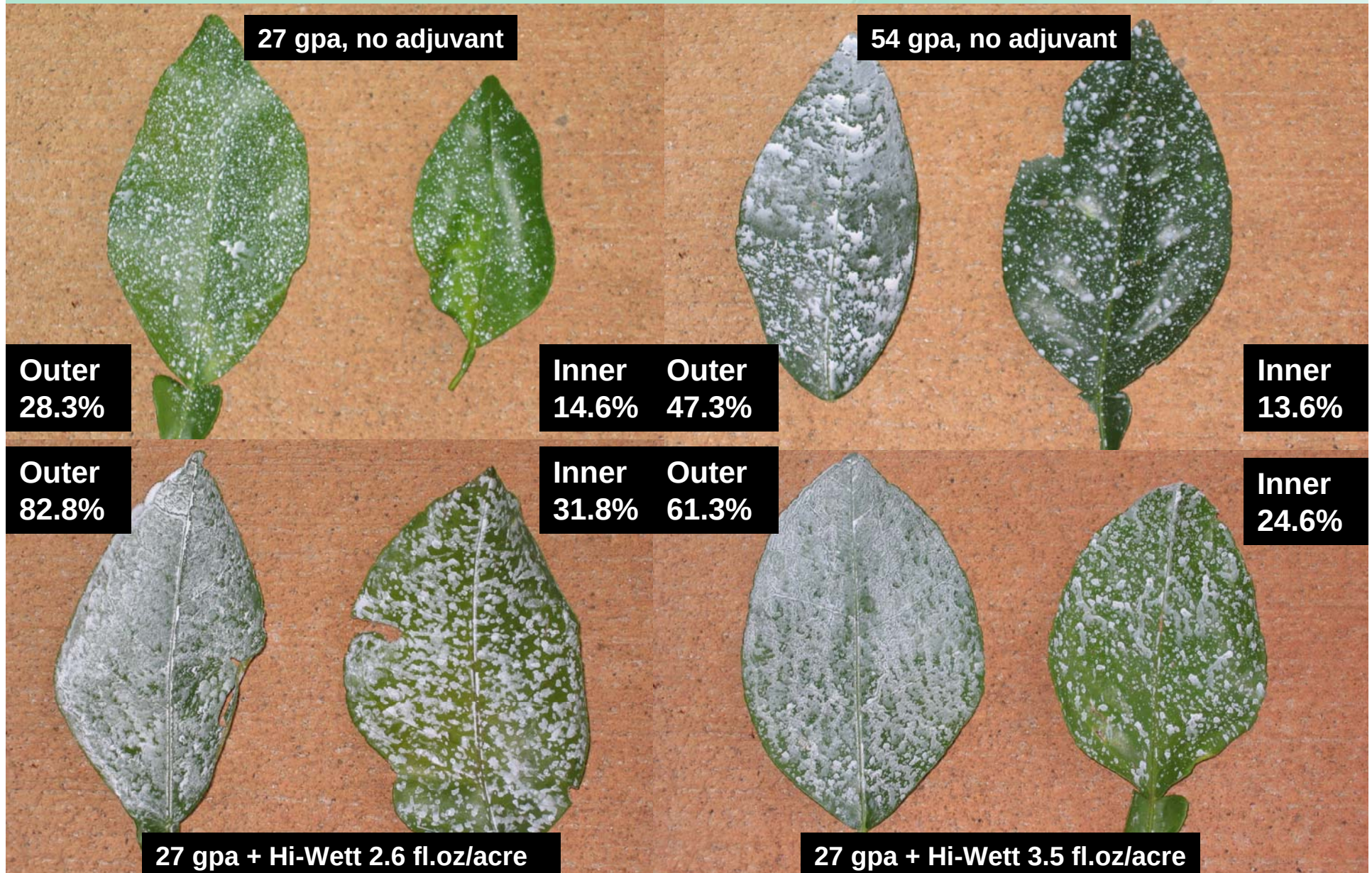


Quantum Mist Sprayer 5-50 gpa



Australia – Citrus comparisons

Pictures Courtesy of Nufarm Australia

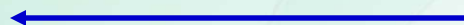


US Citrus Foliage Comparison

200 GPA with no Hi-Wett



40 GPA + Hi-Wett



US Citrus Fruit Comparison

200 GPA with no Hi-Wett



40 GPA + Hi-Wett



Australia Cabbage Comparison

33 gpa No Hi-Wett



Pictures Courtesy of Nufarm Australia

16 gpa + Hi-Wett



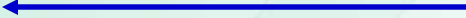
AST
Applied spray
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US Celery Comparison

80 gpa-No Hi-Wett



20 gpa + Hi-Wett



NZ Strawberry Comparison

80 gpa, 350 psi, 3 mph
No Hi-Wett--Hollow Cones



29 gpa, 60 psi, 5 mph + Hi-Wett
2 x 02 FF in Twincaps



AST
Applied spray
Technologies

NZ Strawberry Comparison

80 GPA-No Hi-Wett



29 gallons/acre



Hi-Wett® super-spreader

LESS = ***MORE***
(water) (efficiency)

