Anthracnose of lentils

Differentiating anthracnose from Ascochyta

Anthracnose

Stem lesions first appear at the **base (lower third) of the plant**

Ascochyta

Stem lesions often first appear **in the upper half of the plant**

Anthracnose of lentils

Differentiating anthracnose from Ascochyta

Anthracnose

Pathogen fruiting structures generally **not observed on leaves.**

Ascochyta

Pathogen fruiting structures **sometimes observed on leaves.**

Fruiting structures generally develop in concentric rings.

Anthracnose of lentils

Differentiating anthracnose from Ascochyta

Anthracnose

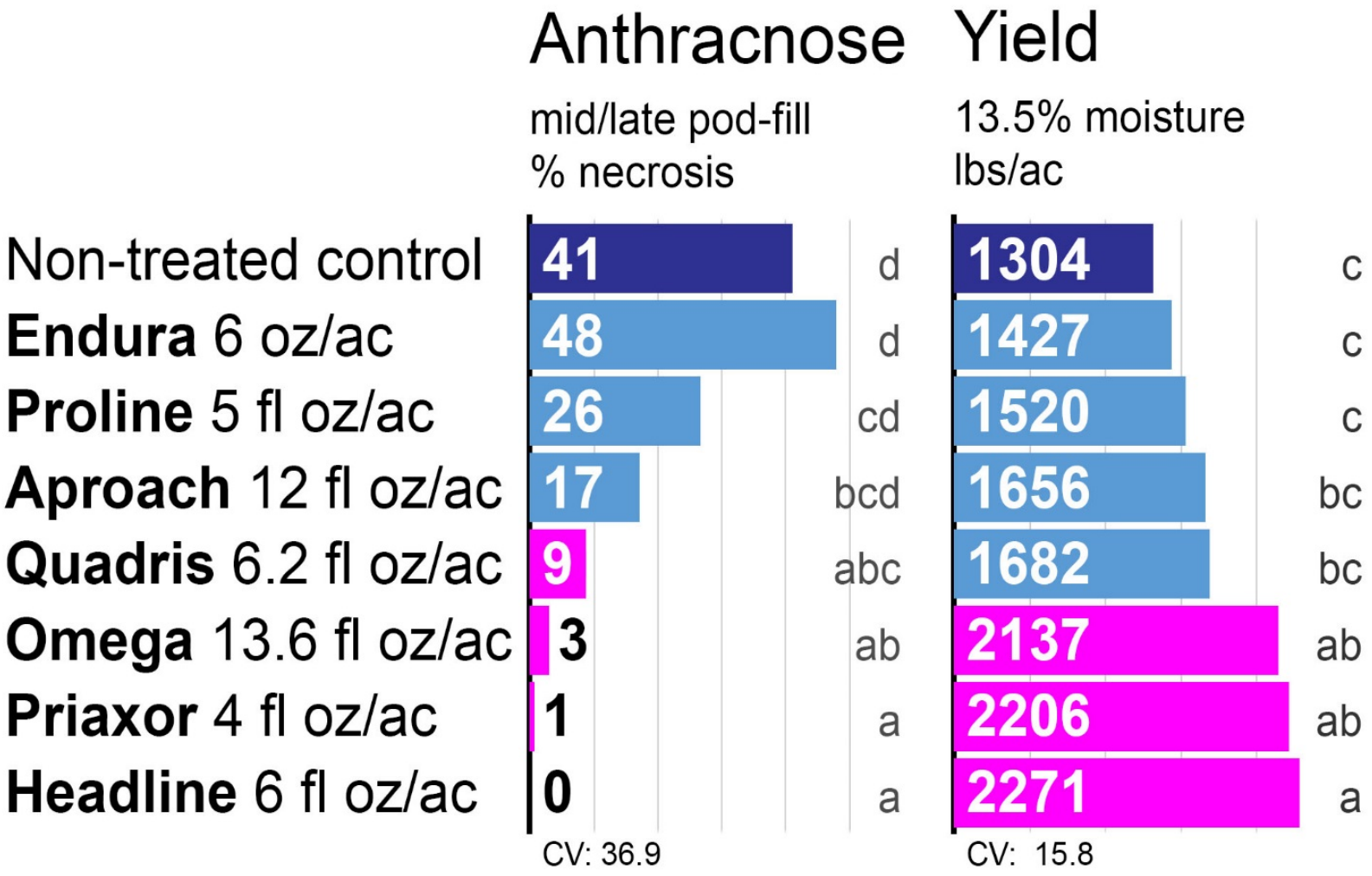
Stems are girdled, resulting in **necrotic patches.**

Ascochyta

Peduncles are girdled, resulting in **flower and pod abortion.**

Fungicide efficacy

Anthracnose of lentils



Omega is not currently registered for use on lentils.

Combined analysis across five field trials (Carrington and Williston, ND)

Anthracnose management

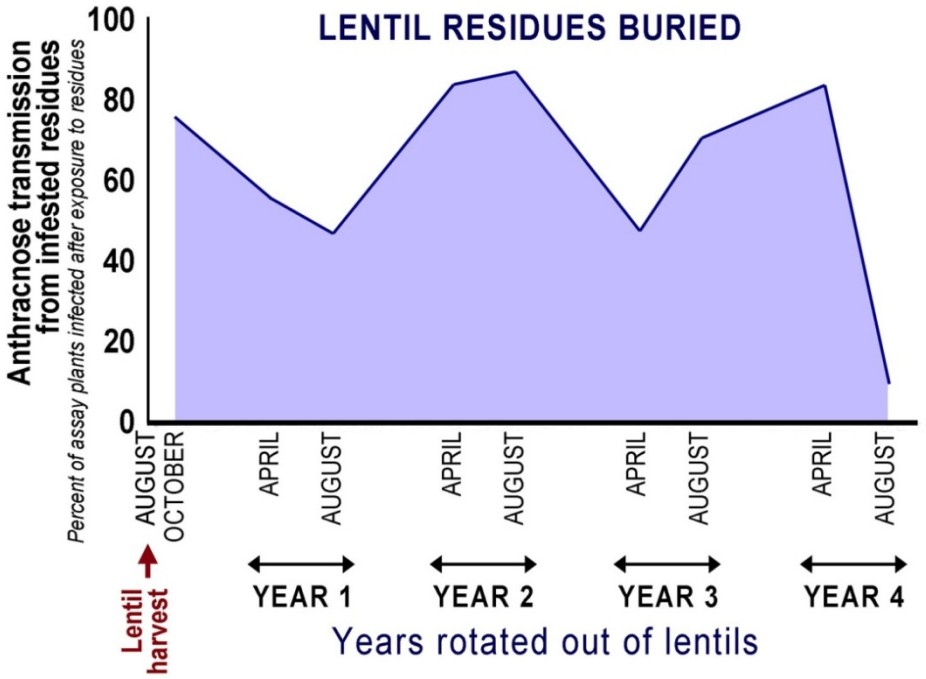
Persistence of the pathogen

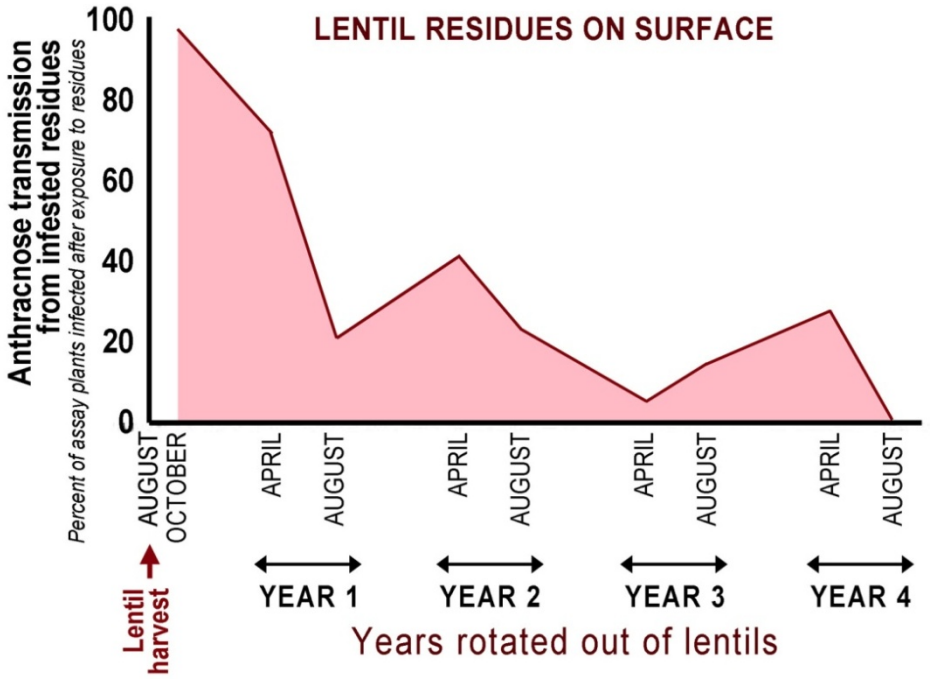
The pathogen persists in the soil

No-till is best. Long rotations are best (>3 years out of lentils).

WINNIPEG, MANITOBA:

1991-1995





Buchwaldt et al. 1996. Phytopathology 86:1193-1198.

White mold

Lentils

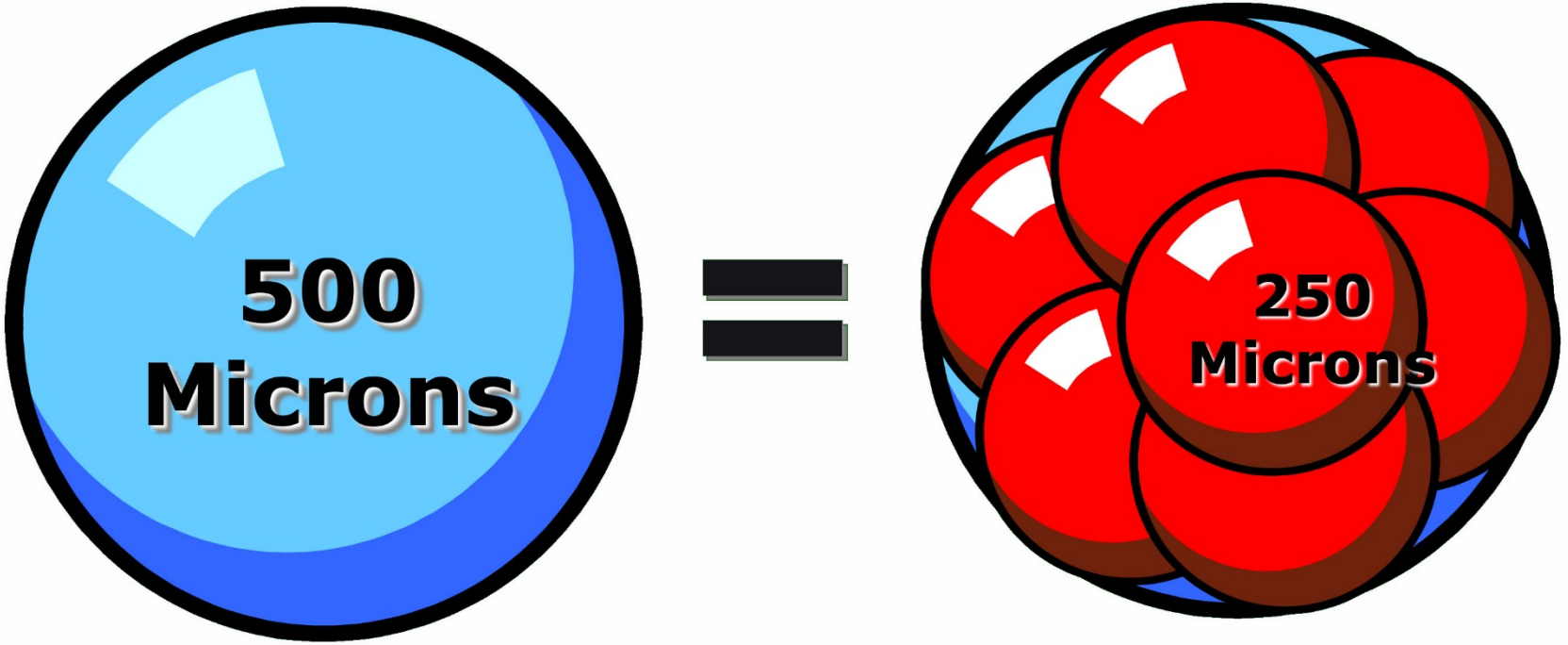
Fungicide application methods

- White mold develops in the interior of dense lentil canopies
- **Achieving satisfactory fungicide deposition to the interior of a dense lentil canopy can be a challenge.**

Spray droplet size

Cutting droplet diameter in half

Results in **eight times as many droplets**



(there is one more droplet in the rear)

Image adapted from a presentation by Bob Wolf (Kansas State Univ.); Bobby Grisso and Pat Hipkins (Virginia Tech Univ.); and Tom Reed (TeeJet)

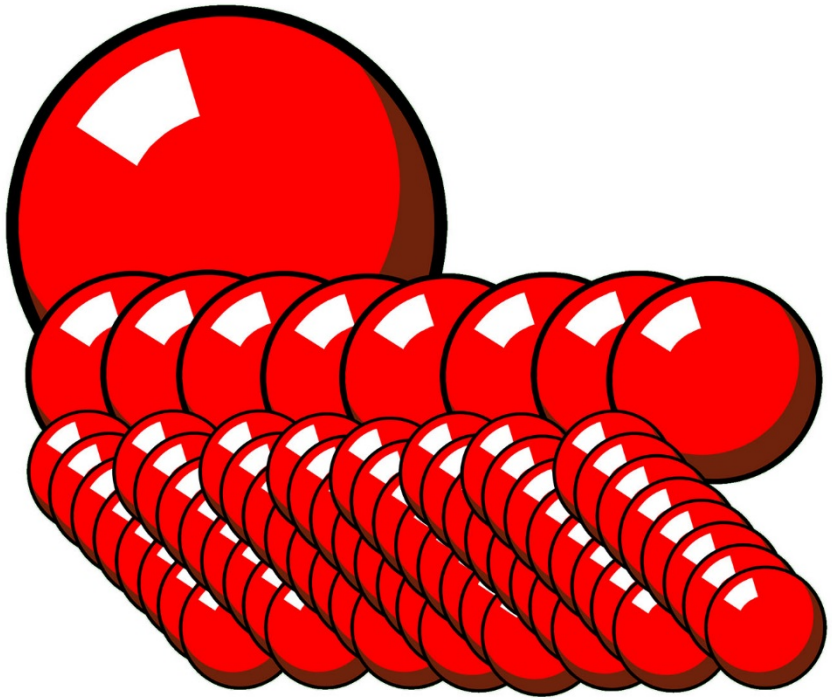
Spray droplet size

0.065 mm^3 spray volume =

one 500-um diameter droplet

eight 250-um diameter droplets

sixty-four 125-um diameter droplets



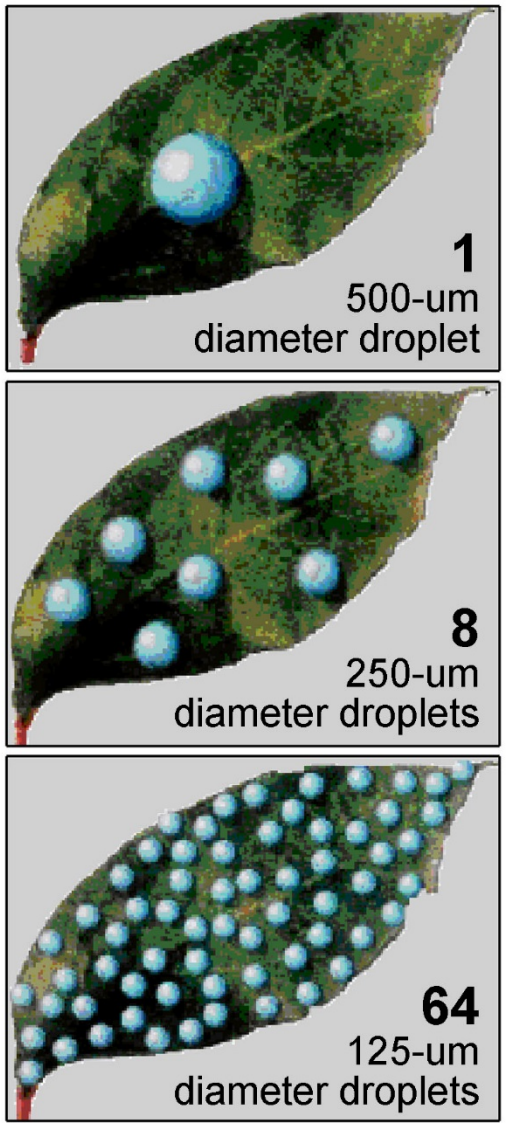
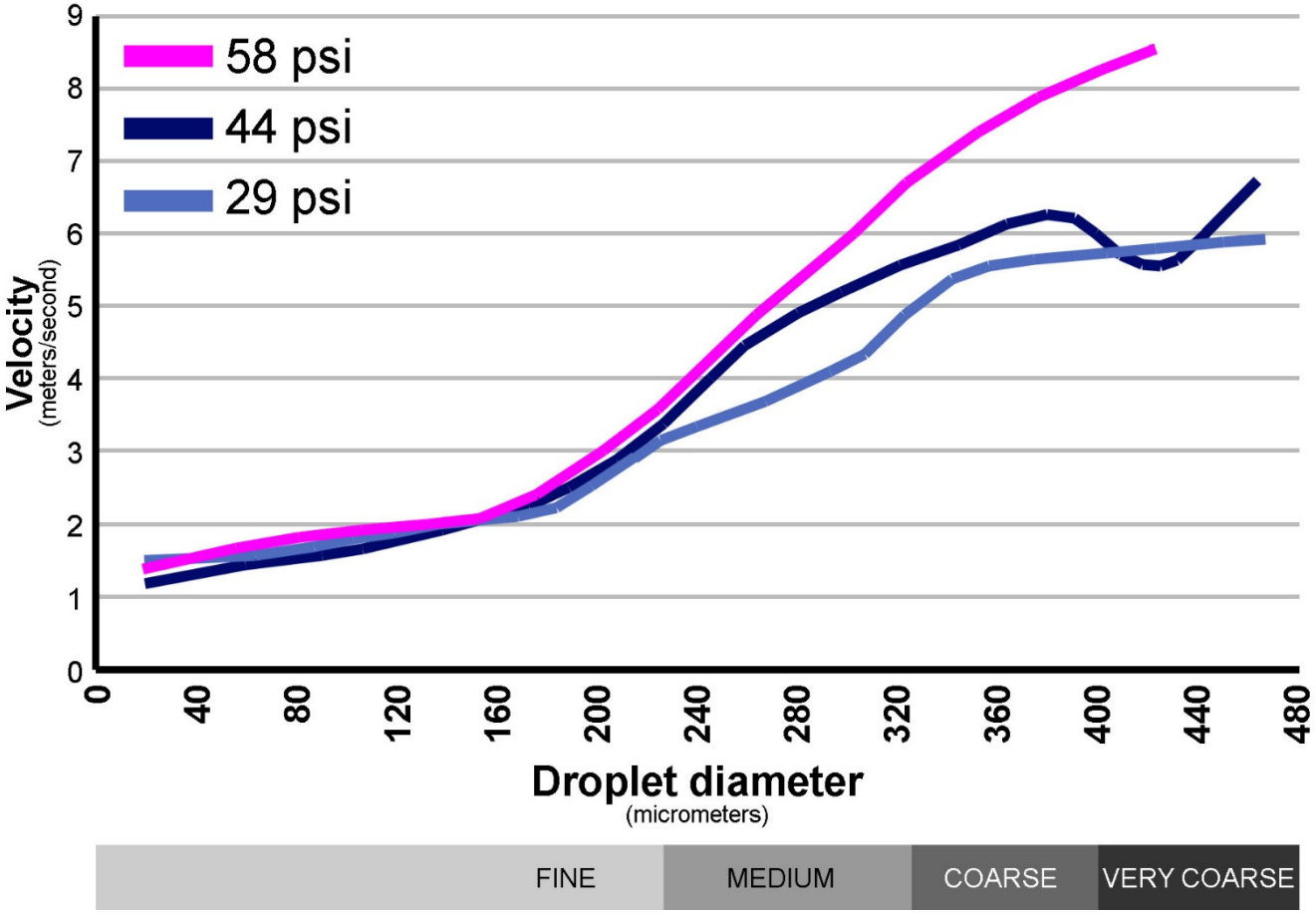


Image adapted from a presentation by Bob Wolf (Kansas State Univ.); Bobby Grisso and Pat Hipkins (Virginia Tech Univ.); and Tom Reed (TeeJet)

Spray droplet size

… but larger droplets have greater velocity, drift less.

Increased velocity and reduced drift improves canopy penetration.



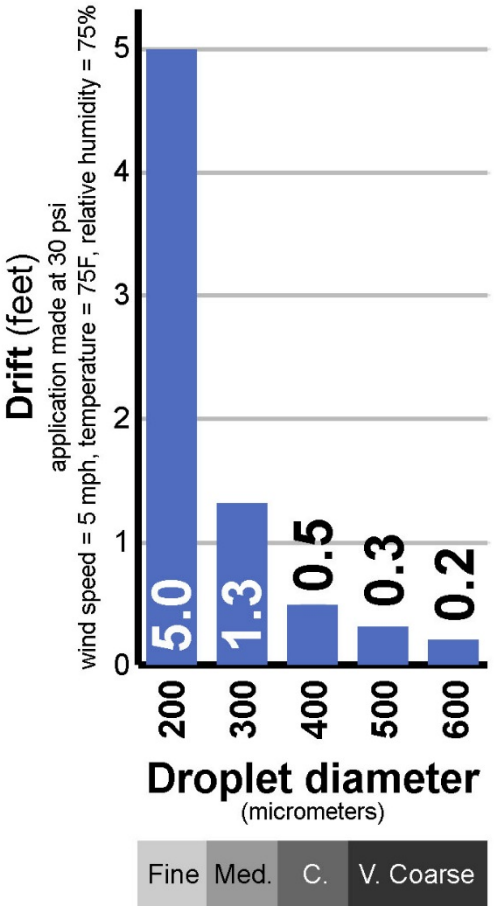


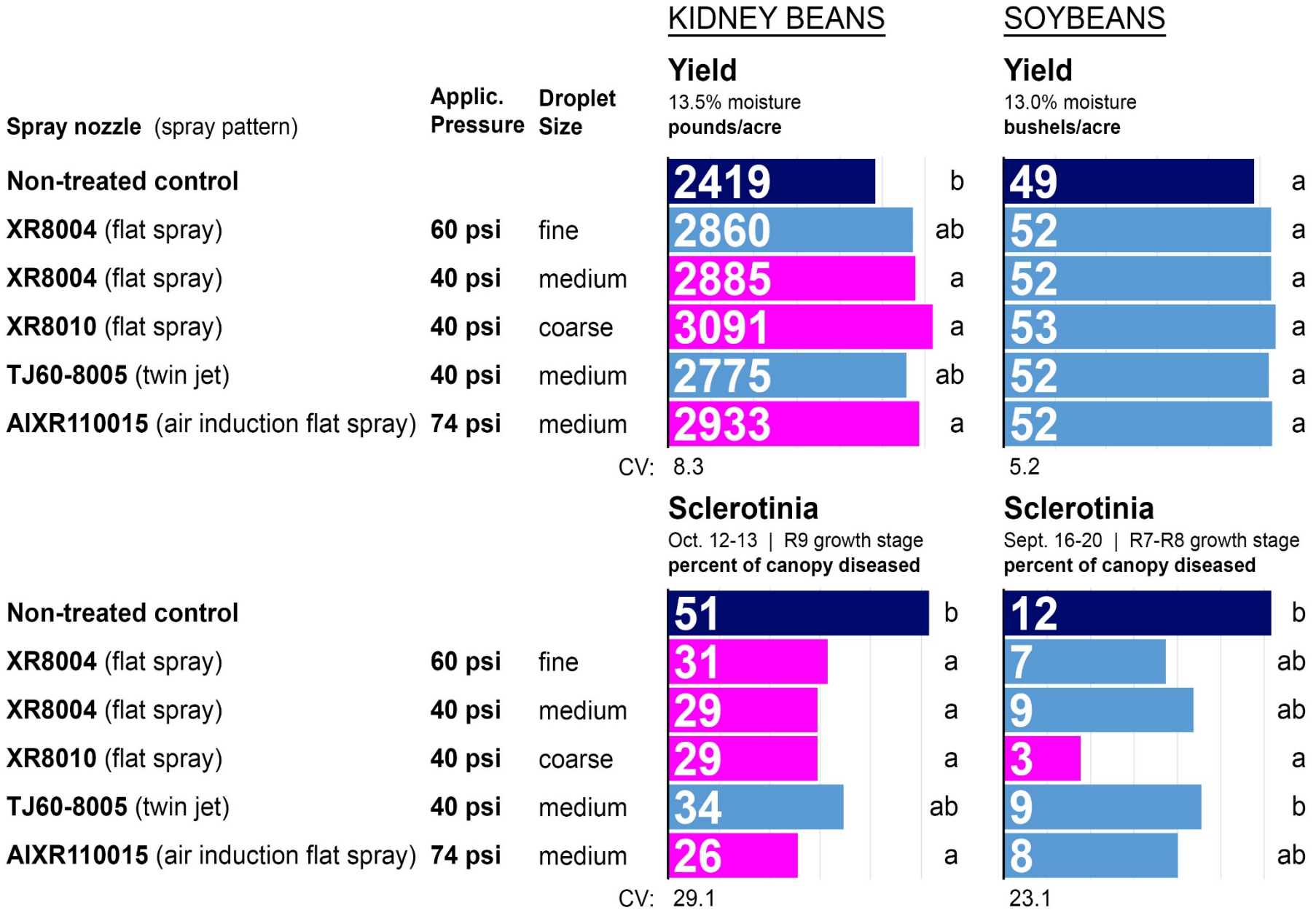
Image adapted from a presentation by Bob Wolf (Kansas State Univ.); Bobby Grisso and Pat Hipkins (Virginia Tech Univ.); and Tom Reed (TeeJet)

LENTILS

Spray nozzle (spray pattern)	Applic. Pressure	Droplet Size	Boscalid residues 16 days after fungicide applied ppm (lower two-thirds of canopy)	
Non-treated control			0.1	c
XR8004 (flat spray)	**60 psi**	fine	2.3	ab
XR8004 (flat spray)	**40 psi**	medium	2.1	ab
XR8010 (flat spray)	**40 psi**	coarse	1.7	b
TJ60-8005 (twin jet)	**40 psi**	medium	2.9	a
AIXR110015 (air induction flat spray)	**74 psi**	medium	1.9	b
		CV:	22.0	

PINTO BEANS

Spray nozzle (spray pattern)	Applic. Pressure	Droplet Size	Yield 13.5% moisture pounds/acre		Sclerotinia Sept. 8 | R7-R8 growth stage percent of canopy diseased	
Non-treated control			3127	a	44	b
XR8004 (flat spray)	**60 psi**	fine	3643	a	23	a
XR8004 (flat spray)	**40 psi**	medium	3537	a	19	a
XR8010 (flat spray)	**40 psi**	coarse	3407	a	25	a
TJ60-8005 (twin jet)	**40 psi**	medium	3826	a	20	a
AIXR110015 (air induction flat spray)	**74 psi**	medium	3390	a	17	a
		CV:	11.4		35.3	


KIDNEY BEANS
SOYBEANS
Yield
13.5% moisture
pounds/acre
Yield
13.0% moisture
bushels/acre
Spray nozzle (spray pattern)
Applic. Pressure
Droplet Size
Non-treated control
XR8004 (flat spray) 60 psi fine
XR8004 (flat spray) 40 psi medium
XR8010 (flat spray) 40 psi coarse
TJ60-8005 (twin jet) 40 psi medium
AIXR110015 (air induction flat spray) 74 psi medium
2419 b
2860 ab
2885 a
3091 a
2775 ab
2933 a
49 a
52 a
52 a
53 a
52 a
52 a
CV: 8.3
5.2
Sclerotinia
Oct. 12-13 | R9 growth stage
percent of canopy diseased
Sclerotinia
Sept. 16-20 | R7-R8 growth stage
percent of canopy diseased
Non-treated control
XR8004 (flat spray) 60 psi fine
XR8004 (flat spray) 40 psi medium
XR8010 (flat spray) 40 psi coarse
TJ60-8005 (twin jet) 40 psi medium
AIXR110015 (air induction flat spray) 74 psi medium
51 b
31 a
29 a
29 a
34 ab
26 a
12 b
7 ab
9 ab
3 a
9 b
8 ab
CV: 29.1
23.1

Thank you!

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