

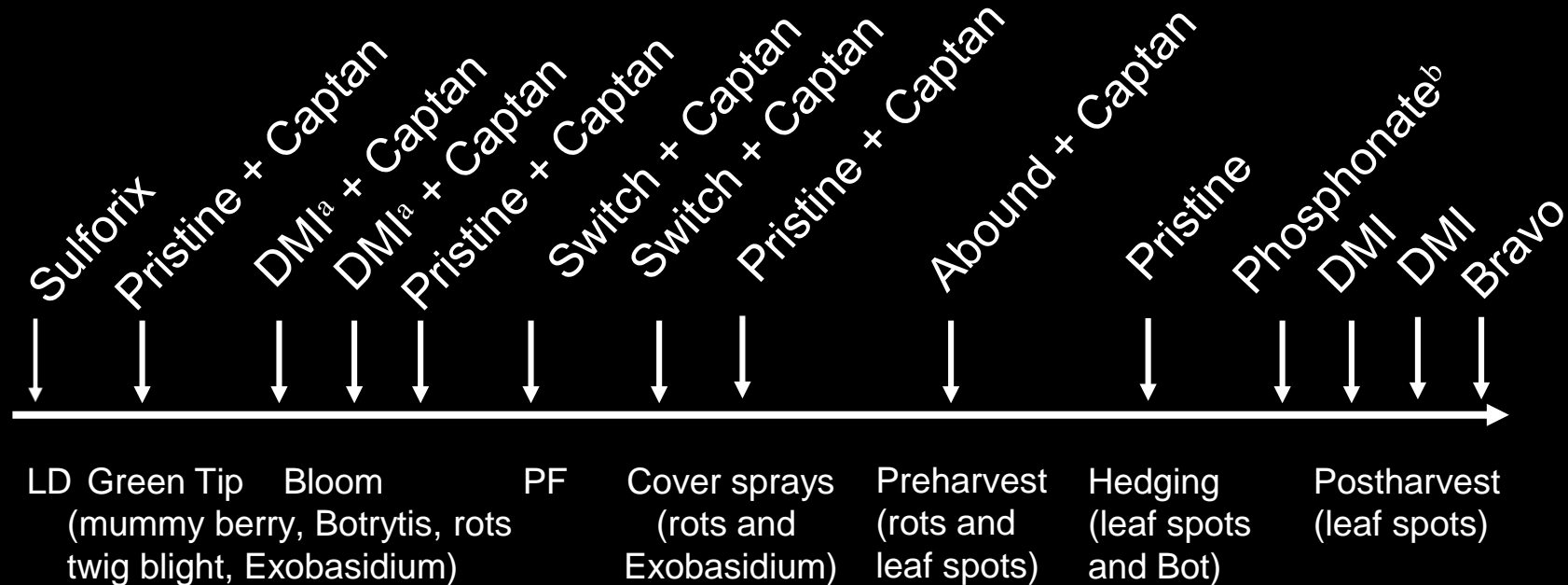
Blueberry Disease Update 2017



P.M. BRANNEN

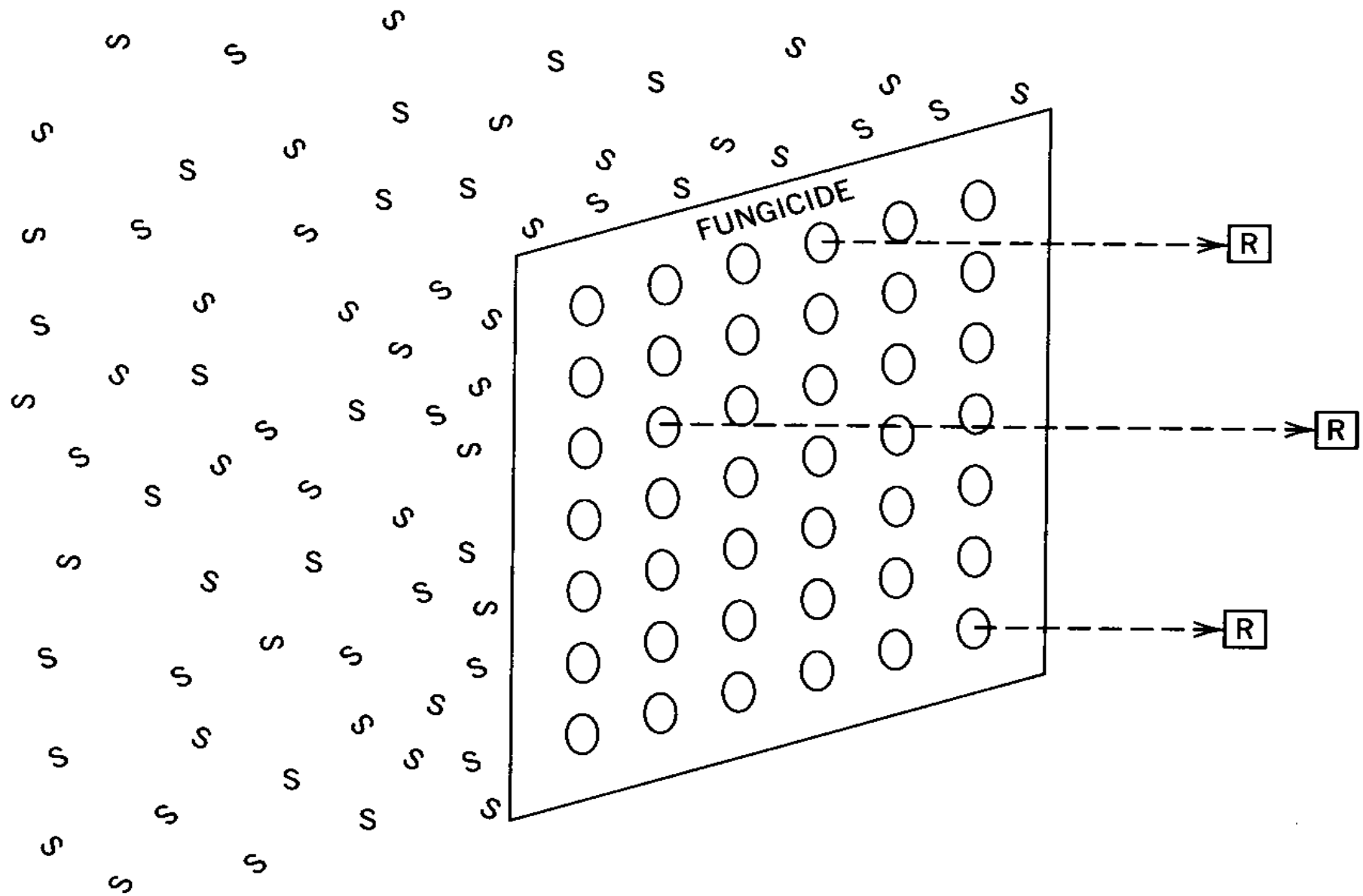
University of Georgia, Athens, GA

Blueberry Disease Management Strategy with Exobasidium and Fungicide-Resistant Anthracnose



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^bPhosponates include materials such as ProPhyt, K-phite, etc.



R = resistant S = sensitive

Principles of Resistance Management

- ❖ Alternating sprays with fungicides from different classes (different modes of action) is an important means of resistance management.
- ❖ Tank-mixing of different fungicides is also an acceptable method of resistance management, and both methods are employed.
- ❖ Many fungicides are limited to a set number of applications per year in order to improve their long-term survival. Follow the label recommendations.

Exobasidium leaf and fruit spot (*Exobasidium maculosum*)

- ❑ A once-rare/insignificant problem, now common in the Southeast
- ❑ Identified as a fungal disease in NC in 1997
- ❑ Initially reported in 2008 for Georgia
- ❑ Species named in 2014

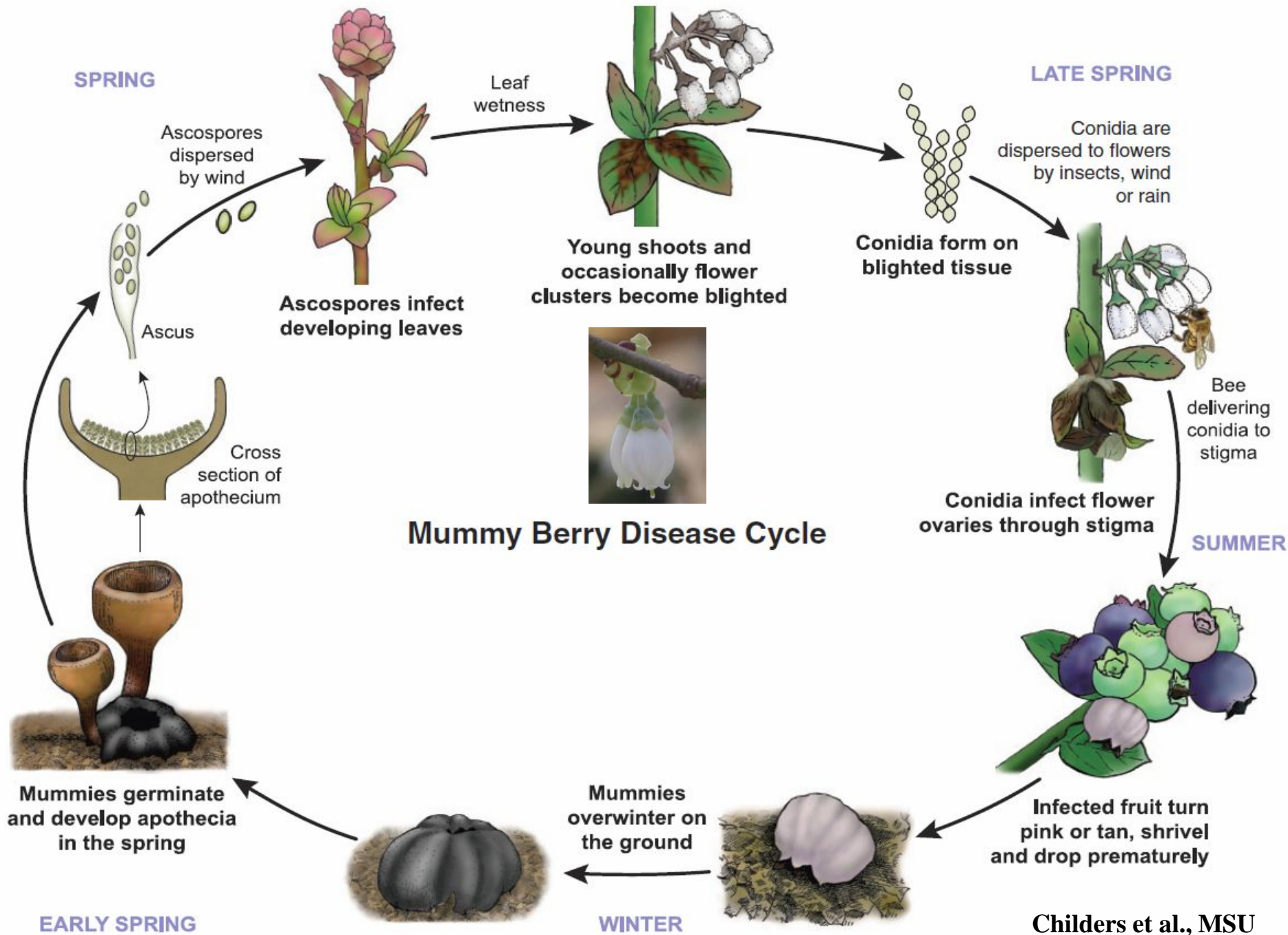


Seasonal application timing	Product and rate	Active ingredient	Specific application dates		
			Site 1 (2014/15)	Site 1 (2015/16)	Site 2 (2015/16)
----	Untreated check	----	----	----	----
Late summer or fall (1x)	JMS Stylet Oil, 6 qt/100 gal	Paraffinic oil	9 Oct. 2014	27 Aug. 2015	25 Aug. 2015
Fall (2x)	<u>Captan</u> 4L, 2.5 qt/A	<u>Captan</u>	9 Oct. 2014 7 Nov. 2014	25 Sept. 2015 23 Oct. 2015	25 Sept. 2015 23 Oct. 2015
Fall (2x)	Lime sulfur, 5 gal/A	Calcium polysulfide	9 Oct. 2014 10 Nov. 2014	25 Sept. 2015 23 Oct. 2015	25 Sept. 2015 23 Oct. 2015
Dormant (1x)	<u>Damoil</u> , 3 gal/100 gal	Dormant oil	20 Jan. 2015	25 Jan. 2016	25 Jan. 2016
Dormant (1x)	<u>Dormex</u> , 0.75 gal/A	Hydrogen cyanamide	20 Jan. 2015	25 Jan. 2016	25 Jan. 2016
Dormant (1x)	Lime sulfur, 5 gal/A	Calcium polysulfide	20 Jan. 2015	25 Jan. 2016	25 Jan. 2016

Timing and number of sprays	Treatment	Site 1 (2014/15)		Site 1 (2015/16)		Site 2 (2015/16)	
		Leaf spot severity	Fruit spot incidence	Leaf spot severity	Fruit spot incidence	Leaf spot severity	Fruit spot incidence
----	Untreated check	0.344	20.7	0.363	11.4	0.469	7.0
Summer/ fall (1x)	Paraffinic oil	0.385	18.4	0.298	6.83	0.521	8.0
Fall (2x)	<u>Captan</u>	0.540 *	21.5	0.393	14.3	0.497	9.0
Fall (2x)	Calcium polysulfide	0.149 *	5.47 *	0.036 *	2.65 *	0.156	4.0
Dormant (1x)	Dormant oil	0.605 *	37.4 *	0.639 *	20.3 *	0.331	5.3
Dormant (1x)	Hydrogen <u>cyanamide</u>	0.169 *	6.8 *	0.036 *	1.32 *	0.256	3.5
Dormant (1x)	Calcium polysulfide	0.094 *	1.45 *	0.034 *	0.86 *	0.236	6.3
<u>Prob > F</u>		<0.0001	<0.0001	<0.0001	<0.0001	0.0858	0.2618

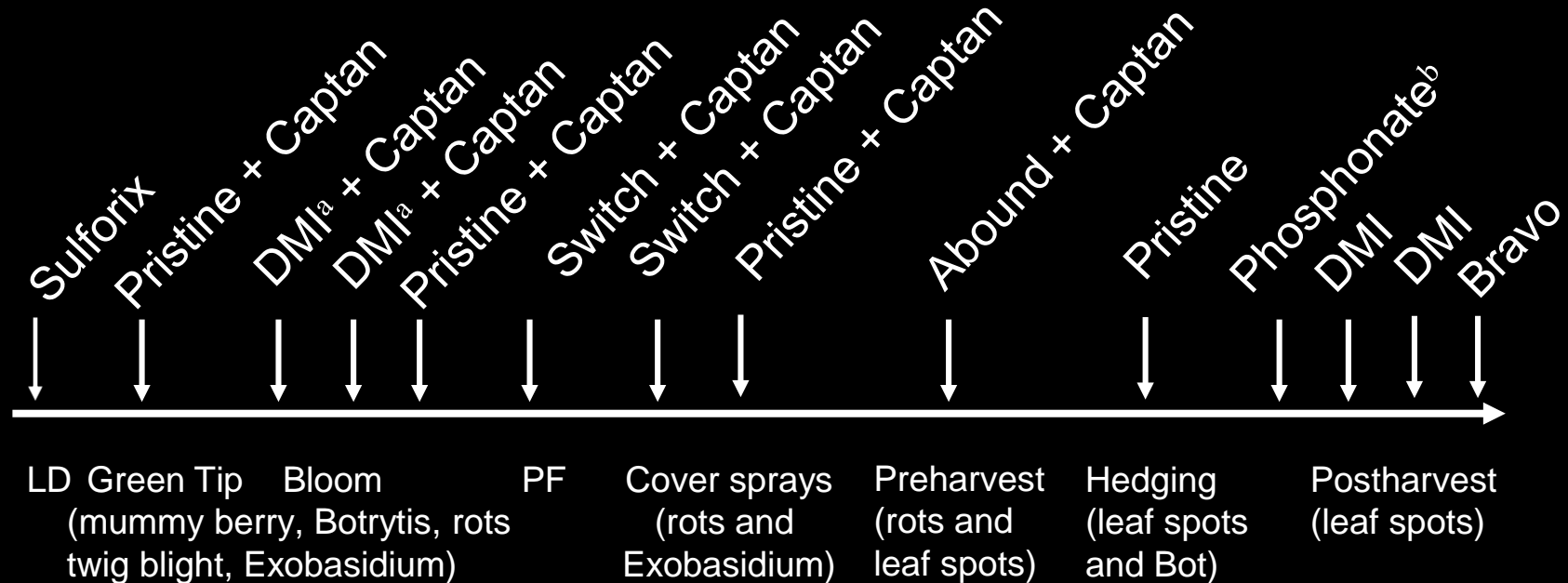
‡Disease intensity values in each column are presented as a heat-map where the highest values are shaded in red and the lowest in green. Values with an asterisk (*) are significantly higher or lower than the corresponding untreated control.

In 2016 trials, Lime Sulfur Ultra provided the same control as Sulforix when applied late-dormant. Both were applied at 2 gallons per acre rates. Data is limited to 2016 trials, and disease pressure was not high in any trial.



Childers et al., MSU

Blueberry Disease Management Strategy with Exobasidium and Fungicide-Resistant Anthracnose

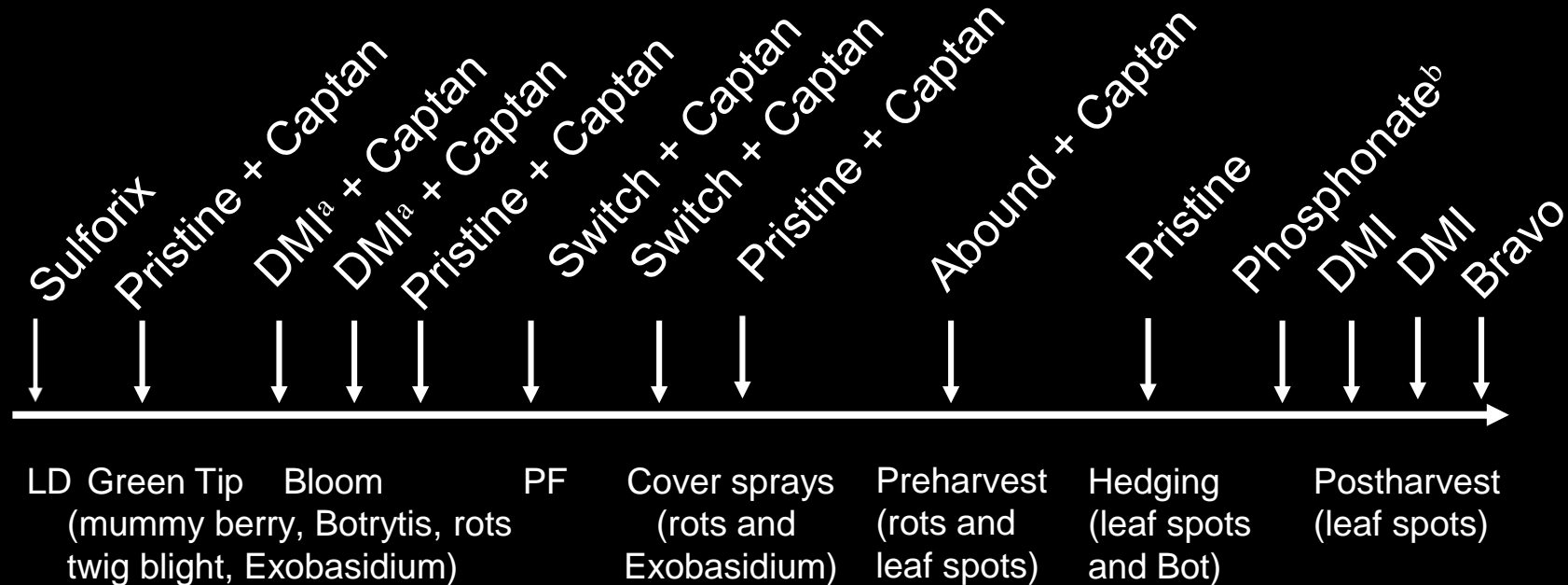


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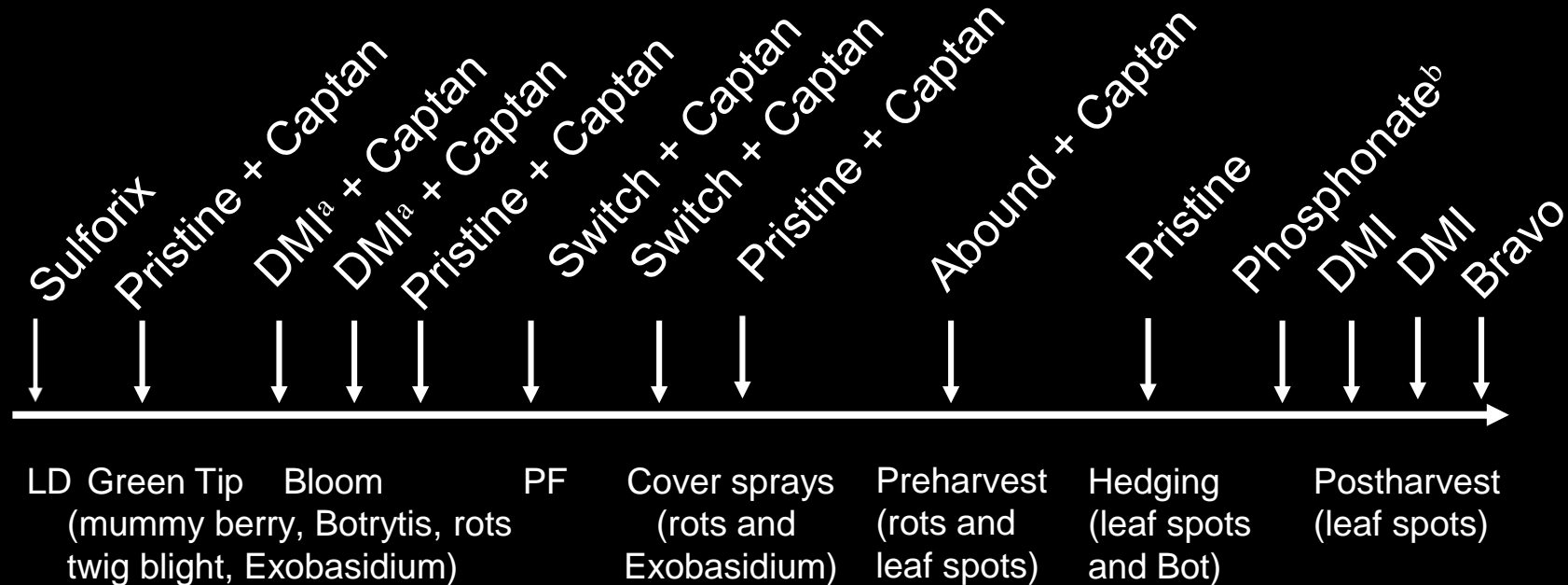
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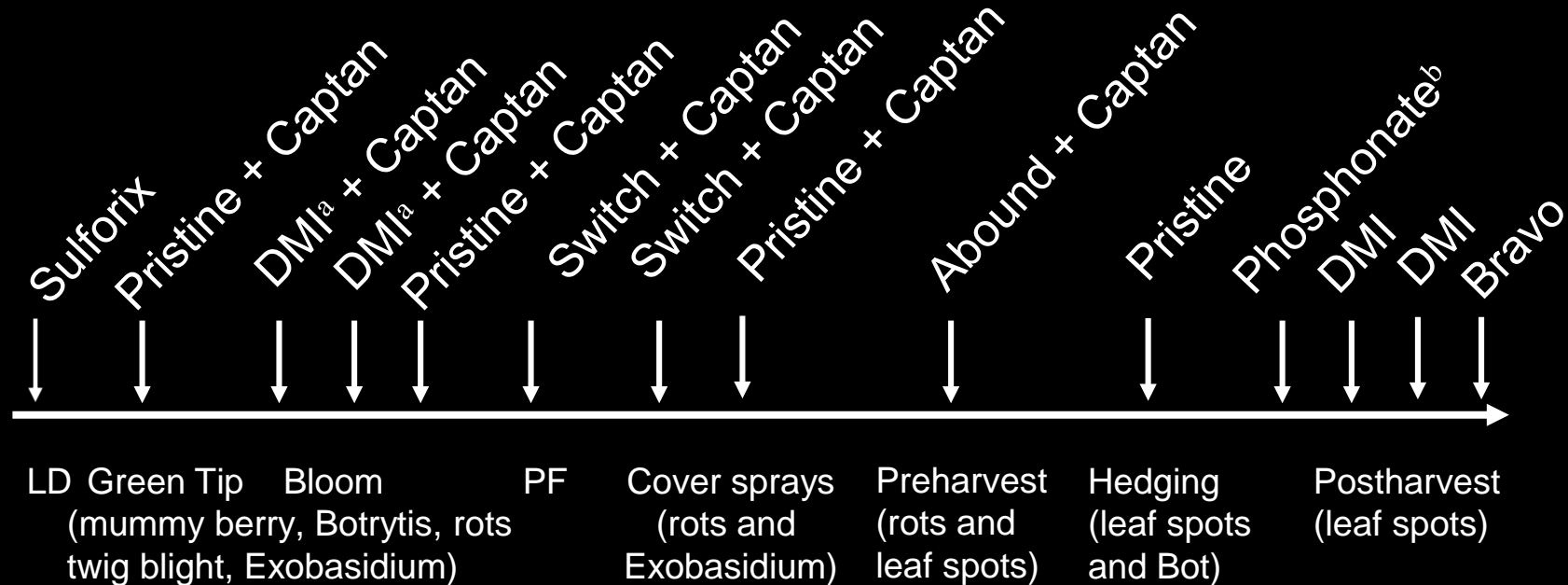


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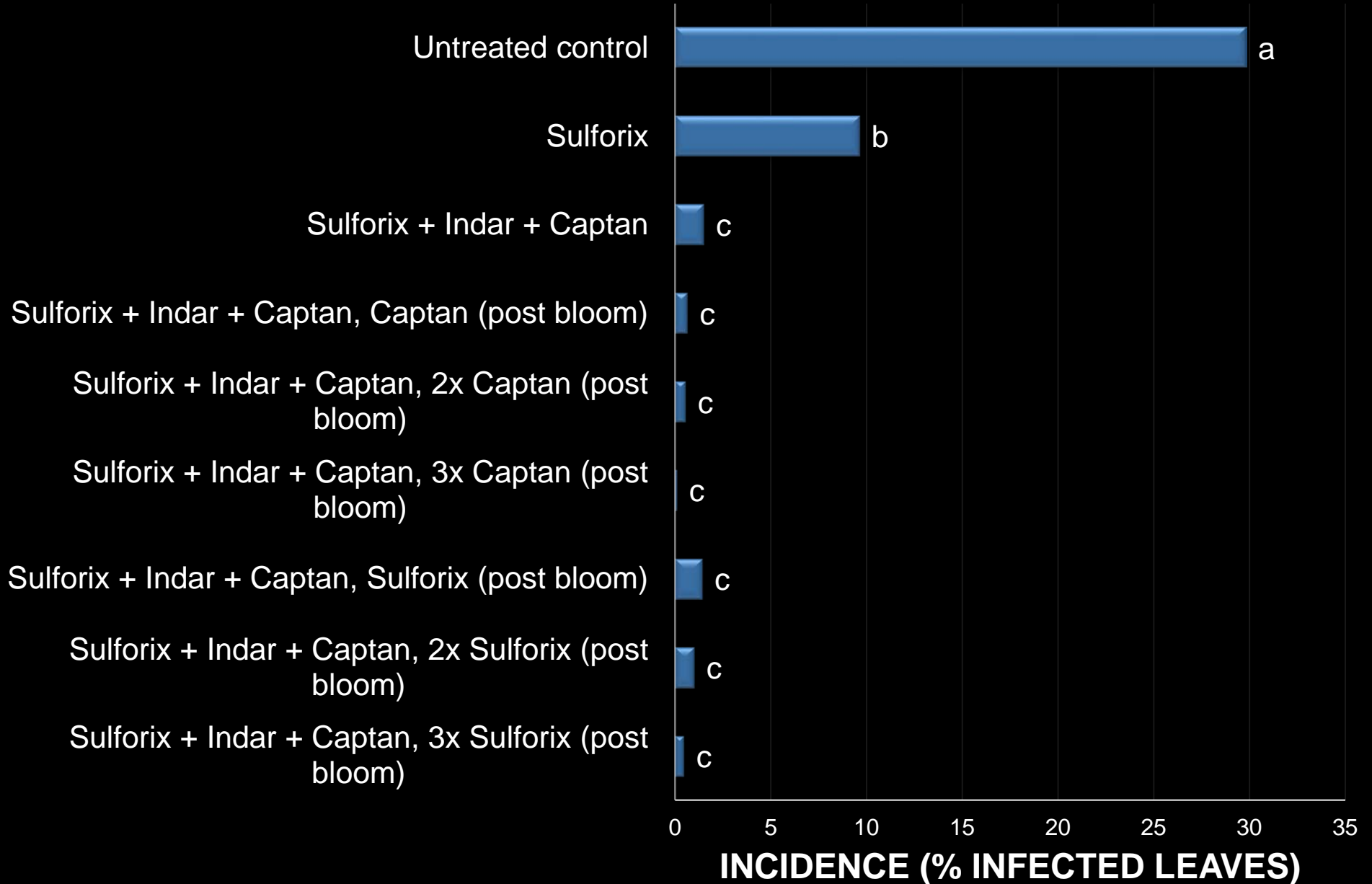


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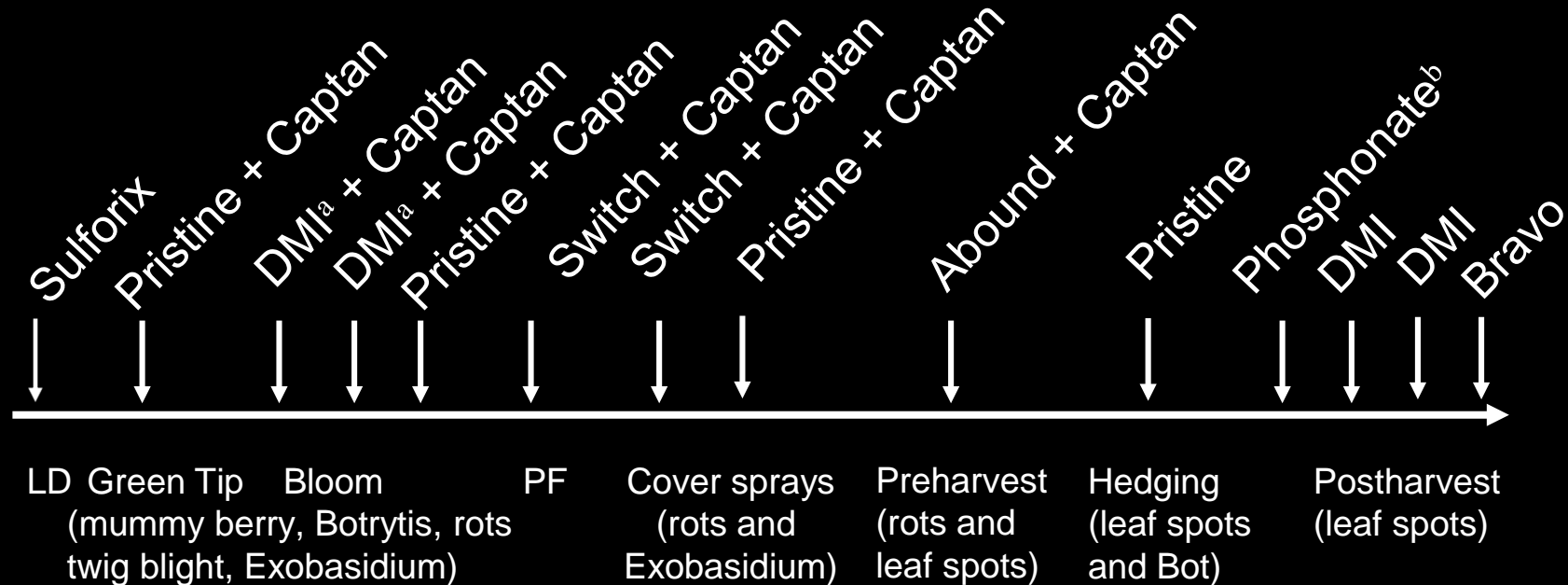
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Exobasidium Trial (2015)

- Alma, GA -



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Alternaria tenuissima



Colletotrichum spp.



Phomopsis vaccinii



Botrytis cinerea

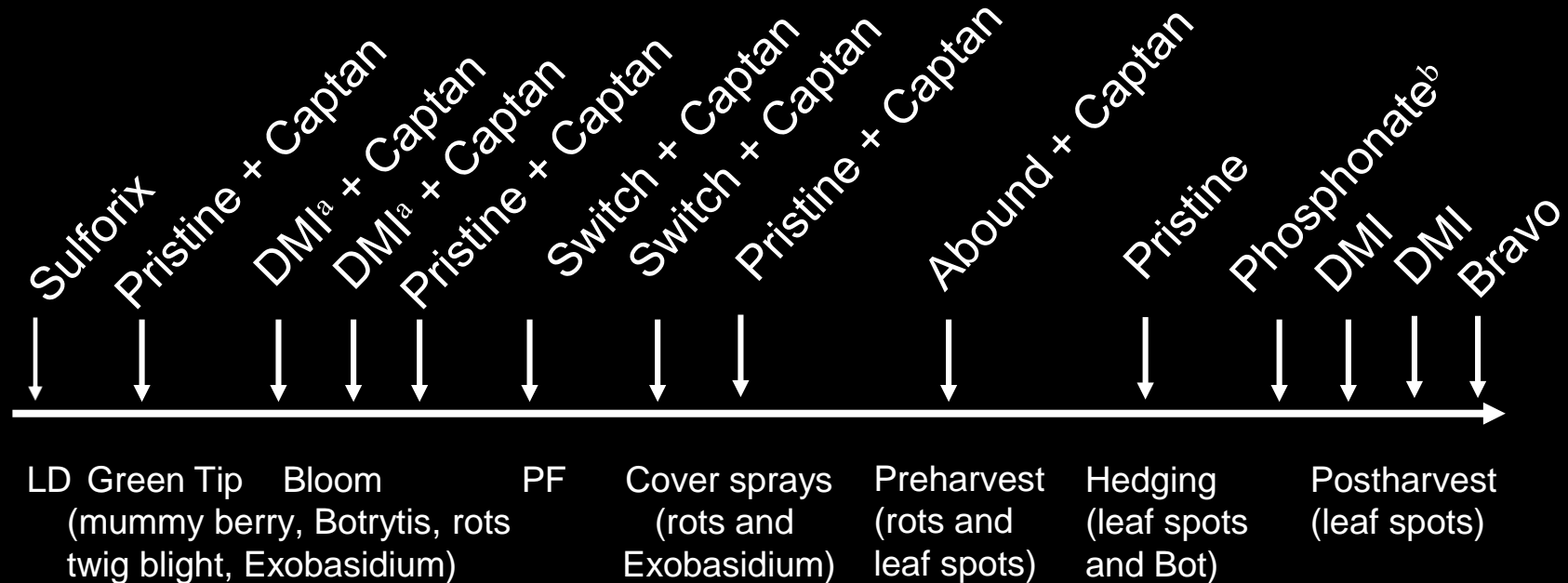


Aureobasidium pullulans

0.01 mm

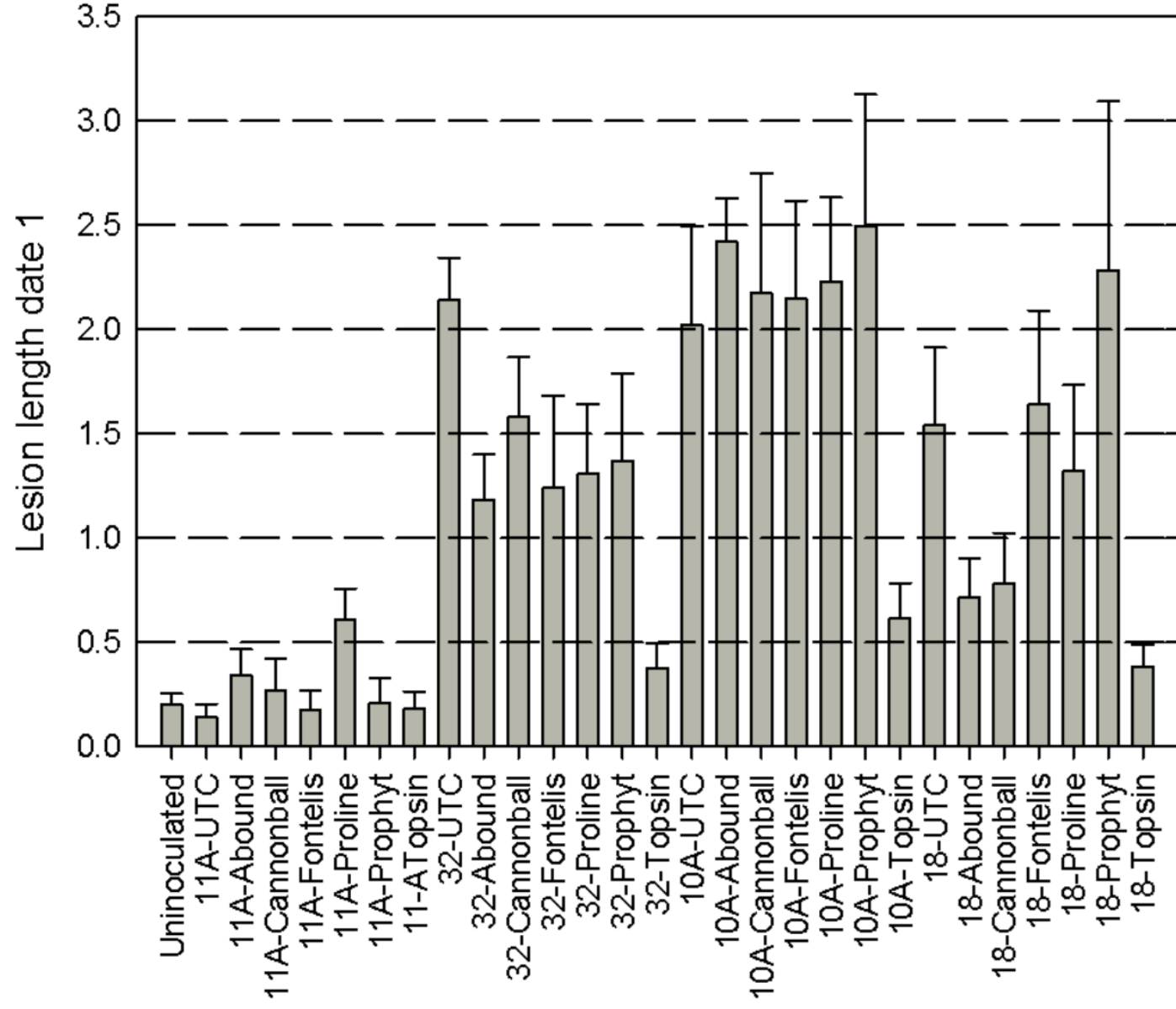


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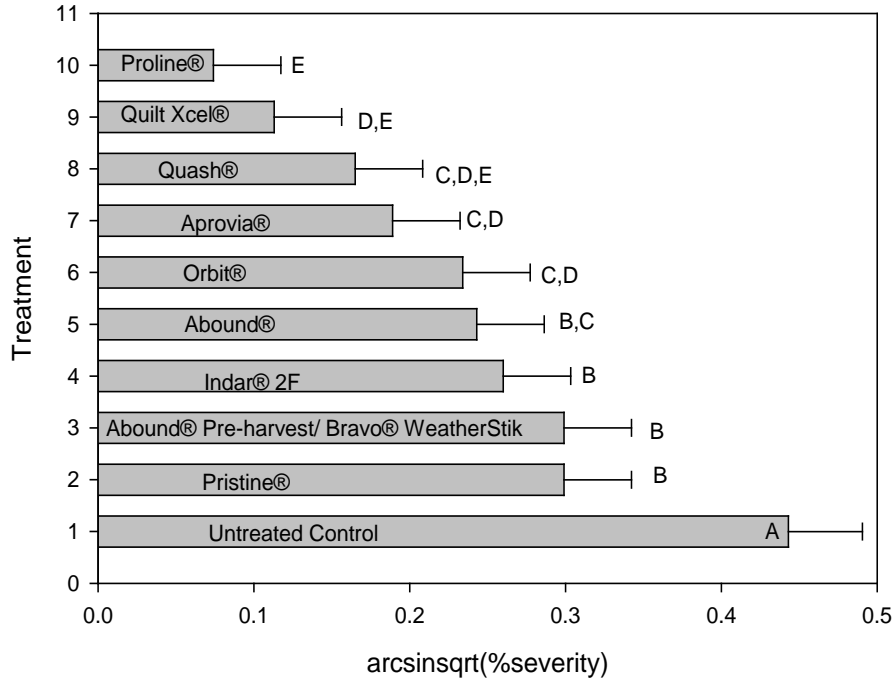




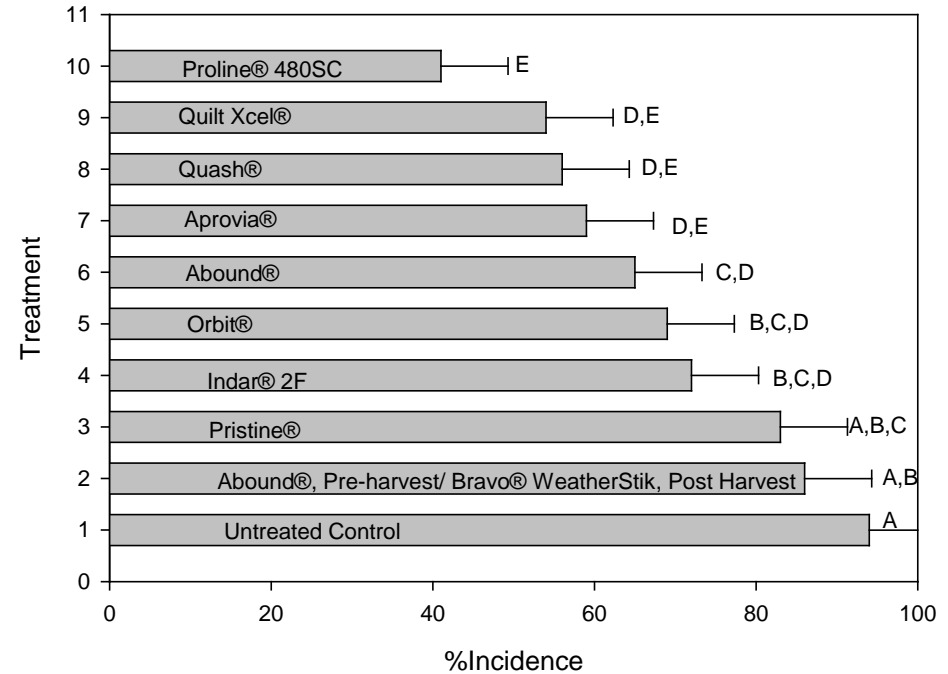


Results: Appling County

June 15, 2016



June 3, 2016



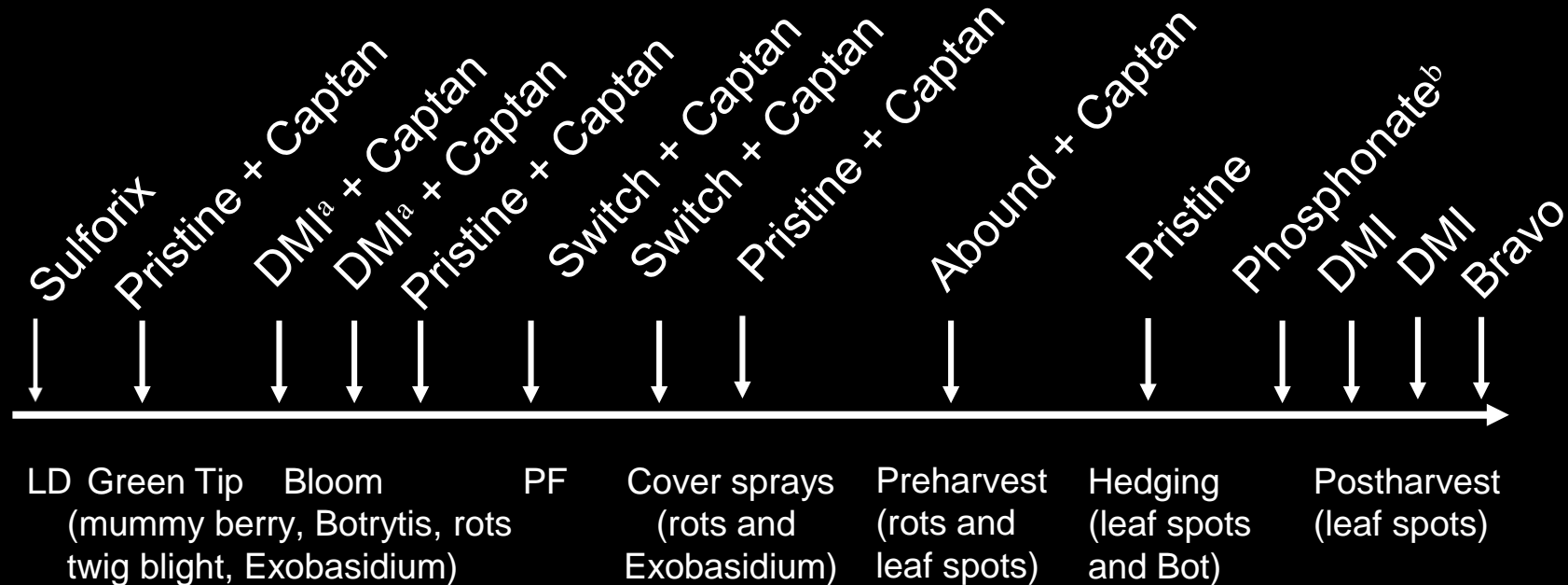
% Disease Severity (Control)

Mean =18.8%; Range= 0 – 70%

Fungicide Efficacy for Control of Blueberry Rust

Class	Trade Name	Chemical	Rate (oz[fluid or dry]/acre)	PHI (days)	Rust Control (Severity)	Rust Control (Incidence)
DMI	Proline® 480SC	prothioconazole 41%	5.7 (169 ml)	7	Excellent	Excellent
DMI	Orbit®	propioconazole 41.8%	6.0 (177 ml)	30	Good	Good
DMI	Quash®	metconazole 50%	2.5 (71 g)	7	Very Good	Very Good
DMI	Indar®	fenbuconazole 23.75%	6.0 (177 ml)	30	Good	Good
SDHI	Aprovia®	benzovindiflupyr 10.27%	13.5 (400 ml)	365	Very Good	Very Good
QoI, Strobilurin	Abound®	azoxystrobin 22.9%	15.5 (458 ml)	0	Good	Good
DMI + Strobilurin	Quilt Xcel®	azoxystrobin 13.5 % + propioconazole 11.7%	21.0 (621 ml)	30	Very Good	Very Good
SDHI + Strobilurin	Pristine®	boscalid 25.2% + pyraclostrobin 12.8 %	23.0 (647 g)	0	Fair	Fair
Strobilurin + Mixed Mode	Abound® / Bravo®	Pre-harvest azoxystrobin/ Post- harvest chlorothanil	15.5 (458 ml)/ 64 (1064 ml)	0	Variable	Good

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