

Figure 2. The free smart phone app, Sporecaster, designed to help farmers predict the need for a fungicide application to control white mold in soybean.

Figure 3. Disease symptoms following petiole inoculation with S. sclerotiorum. Lesion lengths were measured from 72 to 120 h post-inoculation (hpi). At 120 hpi, the control plants were completely wilted in contrast with BPMV-GmRBOH-VI-inoculated plants. Eight plants were used for each of the three biological repeats.

Figure 1. Return on investment of the best performing fungicide chemistries under low and high disease pressure.

Low Pressure High Pressure 100 100 90 Probability of Breaking Even (%) 90 80 80 70 70



60

50

40

30

20

10

0

50.33 (59.00)

50,40^(\$1,00)

50.44 (\$12.00) 50.A8 (\$13.00) 50.51.51A.00

50.3715^{10,001}

BPMV-0

BPMV-GmRBOHVI

Boscalid (R1)

Picoxystrobin (R1+R3)

actofer

50.51 (51.60)



BPMV-0 BPMV-GmRBOHVI



Figure 4. Knocking down the expression of GmRBOH-VI leads to increased drought tolerance. Plants are shown before drought stress (A), and 7 days (B) and 10 days

(C) after water deprivation. (D) Recovery of plants after watering was resumed. In each panel, the BPMV-0 empty vector plants (left) and **GmRBOH-VI-silenced plants**

(right) are shown. Eight plants were used for each of the three biological repeats.

Table 1. Summary of EC₅₀ results for 42 isolates: never exposed to fungicides (baseline), farmer fields (survey) or plots in the current study (treatment)

		EC50		
Fungicide	Group	Avg.	Min.	Max.
Boscalid	Baseline	0.112	0.0661	0.195
	Survey	0.0958	0.0424	0.131
	Treatment	0.121	0.0614	0.177
Picoxystrobin	Baseline	0.0129	0.00993	0.0194
	Survey	0.0112	0.0057	0.0143
	Treatments	0.0113	0.00862	0.0135
Tetraconazole	Baseline	1.0091	0.3149	1.6525
	Survey	1.1391	0.9532	1.489
	Treatments	1.0913	0.7375	1.235
Thiophanate Methyl	Baseline	2.079	1.35	3.427
	Survey	2.046	1.171	3.099
	Treatments	2.279	1.766	3.009

High Pressure Situations, High Probability of ROI

60

50

40

30

20

10

0

\$USD/kg (\$/bu)

50.33 (59.00)

50.31 (\$10.00)

50.A0[511.00]

50.44 (\$12.00) 50.481513.001