

Rice Stink Bug: When Control Is Necessary in Grain Sorghum

Key Points

1. New dynamic thresholds for rice stink bug in sorghum.
2. Early heading growth stages most susceptible.
3. Control is not necessary after soft dough.

Background

The rice stink bug (*Oebalus pugnax*) is known as the key pest of heading rice in Arkansas, but it is also an occasional pest of heading sorghum. Rice stink bug feeds on the developing grains of the sorghum heads only. Damage can begin as soon as sorghum heads emerge until the hard dough growth stage. The largest amount of damage occurs when rice stink bug feeds on developing flowers of the sorghum plant, blanking future grains.

Scouting

Fields should be scouted weekly from head emergence until soft dough. One hundred heads should be examined by shaking heads into a small white bucket or onto a white cloth. Count both adults and nymphs, then use the combined average rice stink bugs per sorghum head to make a treatment decision.



Figure 2. Rice stink bug adults on a sorghum head.



Figure 1. Rice stink bug nymph and adult.

Management

Economic thresholds were determined using data collected in northeast, central and southeast Arkansas in both 2016 and 2017. These dynamic thresholds show the number of rice stink bugs necessary for control at head emergence (Table 1), flowering (Table 2) and soft dough (Table 3). Estimate the price grain will be sold for and the cost of control (chemical + application), and then find the corresponding rice stink bug number. If your average sampled rice stink bug number is equal to or

greater than the number in the threshold table, spraying for the pest is warranted. **No control is necessary at the hard dough growth stage!**

Fields should be inspected a few days after an application to verify that acceptable control was achieved.

Table 1. Head Emergence Growth Stage

Crop Value (\$/Bu)	Rice Stink Bugs/Head					
	Control Costs (\$/Acre)					
	6	8	10	12	14	16
1	5	6	8	9	11	13
2	2	3	4	5	5	6
3	2	2	3	3	4	5
4	2	2	3	3	3	3
5	2	2	2	2	2	3
6	1	2	2	2	2	2
7	1	2	2	2	2	2
8	0.6	1	2	2	2	2

Table 3. Soft Dough Growth Stage

Crop Value (\$/Bu)	Rice Stink Bugs/Head					
	Control Costs (\$/Acre)					
	6	8	10	12	14	16
1	98	150	*	*	*	*
2	44	60	78	98	122	150
3	29	38	49	60	71	84
4	21	29	36	44	52	60
5	17	23	29	35	41	47
6	14	18	23	29	33	38
7	11	16	20	24	29	32
8	11	14	17	21	24	29

*RSB infestation could not warrant insecticide application.

Table 2. Flowering Growth Stage

Crop Value (\$/Bu)	Rice Stink Bugs/Head					
	Control Costs (\$/Acre)					
	6	8	10	12	14	16
1	11	15	19	23	26	30
2	5	8	9	11	13	15
3	4	5	6	8	8	10
4	3	4	5	6	7	8
5	2	3	4	5	5	6
6	2	3	3	4	5	5
7	2	2	3	4	4	5
8	2	2	2	3	4	4

Sorghum Heads Per Acre

Thresholds assume 75,000 heads/acre. If actual populations differ, the equation below can be used to adjust the threshold values.

$$\text{Threshold Value} = \frac{\text{\# of Sorghum Heads}}{75,000}$$

Insecticide	Formulation/Acre	Lb ai/Acre	Acres/Gallon	Minimum Days From Last Application to Harvest
Beta-cyfluthrin Baythroid XL 1 EC	1.3-2.8 oz	0.01-0.022	45.7-98.5	14
Gamma-cyhalothrin Prolex/Declare	1.02-1.54 oz	0.01-0.015	83-125	30
Lamda-cyhalothrin Warrior II 2.08 CS	1.28-1.92 oz	0.02-0.03	66.7-100	30
Zeta-cypermethrin 0.8 EC Mustang Maxx/Respect	1.28-4.0 oz	0.008-0.025	32-100	14 (grain & forage) 45 (fodder)

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