

Table 5. Cotton insect loss estimates for Northeast Arkansas during 2023.

| Pest | Acres Infested | % Acres Infested | Acres Treated | % Acres Treated | # of apps /acres treated | Cost of 1 application | % loss /acre infested | # of apps/ total acres | cost/acre | overall % reduction | Bales lost / pest | Loss + cost | Loss + cost/acre | % Total Loss+Cost |
|---|----------------|------------------|---------------|-----------------|--------------------------|-----------------------|-----------------------|------------------------|-----------------|---------------------|-------------------|---------------------|------------------|-------------------|
| Bollworm/Budworm | 303,000 | 100% | 35,451 | 12% | 1.0 | \$34.50 | 1.2% | 0.12 | \$4.14 | 1.20% | 14,711 | \$6,691,606 | \$22.08 | 9.5% |
| Beet Armyworm | 0 | 0% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Fall Armyworm | 3,030 | 1% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Loopers | 0 | 0% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Cutworms | 30,300 | 10% | 1,515 | 1% | 1.0 | \$14.50 | 0.0% | 0.01 | \$0.15 | 0.00% | 0 | \$4,394 | \$0.01 | 0.0% |
| Cotton Leaf Perforator | 0 | 0% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Saltmarsh Caterpillar | 9,090 | 3% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Lygus | 303,000 | 100% | 298,455 | 99% | 3.0 | \$23.50 | 4.5% | 2.96 | \$69.56 | 4.50% | 55,165 | \$41,465,664 | \$136.85 | 58.9% |
| Cotton Fleahopper | 196,950 | 65% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Stink Bugs (other than brown stink bug) | 287,850 | 95% | 6,060 | 2% | 1.0 | \$23.50 | 0.2% | 0.02 | \$0.47 | 0.19% | 2,329 | \$996,088 | \$3.29 | 1.4% |
| Brown Stink Bug | 287,850 | 95% | 6,060 | 2% | 1.0 | \$23.50 | 0.2% | 0.02 | \$0.47 | 0.19% | 2,329 | \$996,088 | \$3.29 | 1.4% |
| Clouded Plant Bug | 272,700 | 90% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Leaf Footed Bugs | 6,060 | 2% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Spider Mites | 227,250 | 75% | 106,050 | 35% | 1.5 | \$23.50 | 2.0% | 0.53 | \$12.46 | 1.50% | 18,388 | \$9,626,604 | \$31.77 | 13.7% |
| Thrips | 303,000 | 100% | 196,950 | 65% | 1.5 | \$17.50 | 1.2% | 0.98 | \$17.15 | 1.20% | 14,711 | \$10,633,636 | \$35.09 | 15.1% |
| Aphids | 303,000 | 100% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Grasshoppers | 75,750 | 25% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Banded Winged Whitefly | 30,300 | 10% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Silverleaf Whitefly | 0 | 0% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| Boll Weevil | 0 | 0% | 0 | 0% | 0.0 | \$0.00 | 0.0% | 0.00 | \$0.00 | 0.00% | 0 | \$0 | \$0.00 | 0.0% |
| TOTAL | | | | | | | | 4.64 | \$104.39 | 8.78% | 107,633 | \$70,414,080 | \$232.39 | |

SUMMARY DATA

| Data Input | | | Yield and Management Results | | | Economic Results | | |
|--------------------------------|----------|--|------------------------------|---|--------------------------|-----------------------|--------------|----------|
| State | Arkansas | | Total Acres | 303,000 | | Total | | Per Acre |
| Region | MidSouth | | Total Bales Harvested | 845,875 | Foliar Insecticide Costs | \$31,630,170 | | \$104.39 |
| Year | 2023 | | Total Bales Lost to Insects | 107,633 | Seed Treatment Costs | \$3,636,000 | | \$12.00 |
| Total Acres (Upland) | 303,000 | In-furrow cost/treated acre | \$15.00 | Percent Yield Loss | 8.8% | In-Furrow Costs | \$545,400 | \$1.80 |
| Yield / Acre (Upland) | 1,340 | % acres in Boll Weevil Eradication | 100% | Yield w/o Insects (lb/acre) | 1,469 | Scouting Costs | \$3,030,000 | \$10.00 |
| Price / lb | \$0.77 | Cost/acre Boll Weevil Eradication | \$3.00 | Av. # Applications | 4.64 | Eradication Costs | \$909,000 | \$3.00 |
| yield potential (lb/acre) | 1,942 | % acres in Pink Bollworm Eradication | 0% | Total Bales lost (all factors) | 380,025 | Bt Cotton | \$11,586,720 | \$38.24 |
| Acres (Pima) | 0 | Cost/acre Pink Bollworm Eradication | \$0.00 | Total % yield Loss | 31.0% | Total Costs | \$51,337,290 | \$169.43 |
| Yield / Acre (Pima) | 0 | % Insect apps by air | 100% | Transgenic Cotton (arthropods) (# acres) | 303,000 | Yield Loss to Insects | \$39,781,157 | \$131.29 |
| % Acres Scouted | 100% | No. apps by air | 2.5 | Boll Weevil Eradication (# acres) | 303,000 | Total Losses + Costs | \$91,118,447 | \$300.72 |
| Fee / Scouted Acre | \$10.00 | Cost/app by air | \$11.00 | Pink Bollworm Eradication (# acres) | 0 | | | |
| No. times scouted/week | 1.5 | % insect apps by ground | 100% | # Scouted Acres | 303,000 | | | |
| % acres Transgenic (Bt) Cotton | 100% | No. apps by ground | 2.5 | Seed Treatments (arthropods) (# acres) | 303,000 | | | |
| Cost/treated acre (Bt) Cotton | \$38.24 | Cost/app by ground | \$8.50 | In-Furrow Applications (# acres) | 36,360 | | | |
| % acres with seed treatment | 100% | % Loss to weather | 14.0% | Applications by Air (acres) | 303,000 | | | |
| Seed trt. cost/ treated acre | \$12.00 | % loss to non-arthropods | 4.0% | Applications by Ground (acres) | 303,000 | | | |
| % acres with in-furrow | 12% | % loss to other (chemical injury, weeds, diseases, etc.) | 4.2% | No. acres with no foliar insecticide applications | 0 | | | |

Table 5. Cotton insect loss estimates for Northeast Arkansas during 2023, continued.

| Upland Cotton | % Acres | # Acres | Total cost/acre | Bt cost/acre | % acres treated for BW/TBW | # acres treated for BW/TBW | # apps for BW/TBW |
|----------------------------|---------------|----------------|-----------------|----------------|----------------------------|----------------------------|-------------------|
| Bollgard II | 1.5% | 4,545 | \$112.00 | \$35.00 | 100% | 4,545 | 1.5 |
| Bollgard III | 84.5% | 256,035 | \$112.00 | \$35.00 | 10% | 25,604 | 1.0 |
| Bollgard III/Thryvon | 12.0% | 36,360 | \$139.00 | \$35.00 | 10% | 3,636 | 1.0 |
| WideStrike | 0.0% | 0 | \$97.00 | \$35.00 | 0% | 0 | 0.0 |
| WideStrike 3 | 2.0% | 6,060 | \$112.00 | \$35.00 | 10% | 606 | 1.0 |
| TwinLink | 0.0% | 0 | \$112.00 | \$35.00 | 0% | 0 | 0.0 |
| TwinLink Plus | 0.0% | 0 | \$112.00 | \$35.00 | 0% | 0 | 0.0 |
| Total Bt | 100.0% | 303,000 | \$115.24 | \$38.24 | 11.4% | 34,391 | 0.1 |
| Herbicide Traits Only | 0.0% | 0 | \$0.00 | | 0% | 0 | 0.0 |
| Conventional | 0.0% | 0 | \$26.00 | | 0% | 0 | 0.0 |
| Organic | 0.0% | 0 | \$0.00 | | 0% | 0 | 0.0 |
| Total Upland Cotton | 100.0% | 303,000 | \$115.24 | \$38.24 | 11.4% | 34,391 | 0.1 |
| Non Upland Cotton | | | | | | | |
| Pima | 0.0% | 0 | \$0.00 | | 0% | 0 | 0.0 |
| Other | 0.0% | 0 | \$0.00 | | 0% | 0 | 0.0 |
| Organic | 0.0% | 0 | \$0.00 | | 0% | 0 | 0.0 |
| Total (all Cotton) | | 303,000 | \$115.24 | | 11.4% | 34,391 | 0.1 |

| Upland Cotton | Thryvon Bt cost/acre | % acres treated for Thrips | # acres treated for Thrips | # apps for Thrips | % acres treated for Lygus | # acres treated for Lygus | # apps for Lygus |
|----------------------|----------------------|----------------------------|----------------------------|-------------------|---------------------------|---------------------------|------------------|
| Bollgard III/Thryvon | \$27.00 | 3% | 1,091 | 1 | 90% | 32,724 | 2.0 |