

EVALUATION OF SHARPEN HERBICIDE FOR HARVEST AID IN LOUISIANA COTTON PRODUCTION SYSTEMS

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Abstract

Field studies were conducted in 2012 at the LSU AgCenter Northeast Research Station near St. Joseph, La and in Starkville, Ms to evaluate the effectiveness of Sharpen herbicide as a harvest aid in Louisiana and Mississippi cotton production systems. Soil type at St. Joseph was a silt loam with pH 6.8 while at Starkville soil type was a sandy loam with pH 8.0. Cotton variety FM 1944 Glytol (St. Joseph) and PHY 499 WRF (Starkville) were planted on 5/6/12 and 5/3/12, respectively. Studies were conducted in a randomized complete block design with treatments replicated four times. Treatments were applied via compressed air sprayer at 15 GPA at both locations. St. Joseph treatments included Dropp SC @ 2 oz/a 60% open boll (OB) followed by (fb) Boll'd @ 32 oz/a + Sharpen @ 1 oz/a 7 d after 60% OB application; Dropp SC @ 2 oz/a + Sharpen @ 1 oz/a 60% OB fb Boll'd @ 32 oz/a 7 d after 60% OB application; Dropp SC @ 2 oz/a 60% OB fb Boll'd @ 32 oz/a + Aim @ 1 oz/a 7 d after 60% OB application; and Dropp SC @ 2 oz/a + Aim @ 1 oz/a 60% OB fb Boll'd @ 32 oz/a 7 d after 60% OB application. Starkville treatments included Dropp SC @ 2.3 oz/a 60% OB fb Sharpen @ 1 oz/a + Super Boll @ 21.3 oz/a 15 d after 60% OB application; Dropp SC @ 2.3 oz/a + Sharpen @ 1 oz/a 60% OB fb Super Boll @ 21.3 oz/a 15 d after 60% OB application; Dropp SC @ 2.3 oz/a 60% OB; Dropp SC @ 2.3 oz/a 60% OB fb Aim @ 1 oz/a + Super Boll @ 21.3 oz/a 15 d after 60% OB application; Dropp SC @ 2.3 oz/a + Aim @ 1 oz/a 60% OB fb Super Boll @ 21.3 oz/a 15 d after 60% OB application; Dropp SC @ 2.3 oz/a 60% OB fb ET @ 1.5 oz/a + Super Boll @ 21.3 oz/a 15 d after 60% OB application; Dropp SC @ 2.3 oz/a + ET @ 1.5 oz/a 60% OB fb Super Boll @ 21.3 oz/a 15 d after 60% OB; and Dropp SC @ 2.3 oz/a + Folex @ 6.4 oz/a + Super Boll @ 21.3 oz/a 60% OB. Parameters measured included percent defoliation and desiccation at St. Joseph 7, 20, and 28 d after 60% OB and 8, 16, and 23 d after 60% OB at Starkville. Percent open boll was also determined in St. Joseph at 9, 16, and 21 d after 60% OB and at 8, 23, and 30 d after 60% OB in Starkville.

In St. Joseph, at 7 d after 60% OB application (DAT), the Dropp SC/Sharpen combination defoliated cotton only 44% while other treatments evaluated resulted in 76 to 81% defoliation. At 20 DAT, the Dropp SC/Sharpen combination resulted in 84% defoliation, which was lower than other treatments (98 to 100% defoliation). At 28 DAT, complete defoliation was achieved by all treatments evaluated. At 7 DAT, the Dropp SC/Sharpen combination resulted in 58% desiccation, while other treatments resulted in desiccation levels no greater than 4%. At 20 DAT, the Dropp SC/Sharpen combination desiccation level had dropped to 16% compared to 1% or less for other treatments. At 28 DAT, leaf desiccation was not observed for any treatment. At 9 DAT, all treatments resulted in equivalent open boll percentages ranging from 84 to 95%. At 15 DAT, open boll percentage was equivalent and at least 97%. At 21 DAT, bolls were completely opened by all treatments.

In Starkville, at 8 DAT, defoliation level was no greater than 59% and equal among all treatments. At 15 DAT, the Dropp SC/Sharpen combination resulted in 83% defoliation which was greater than or equal to all other treatments (60 to 90%). At 23 DAT, the Dropp SC/Sharpen combination followed by Superboll resulted in 87% defoliation, which was less than that observed for Dropp SC followed by ET/Superboll (97%). At 8 DAT, Dropp SC in combination with Sharpen, Aim, or ET resulted in equivalent desiccation ranging from 10 to 13%. Other treatments resulted in desiccation ranging from 5 to 8%. At 15 DAT, equal desiccation ranging from 4 to 6% was observed for all treatments. At 23 DAT, desiccation levels were no greater than 1%. At 8 DAT, open boll percentage was equal for all treatments ranging from 66 to 78%. At 15 DAT, Dropp SC alone resulted in 81% open boll while other treatments resulted in open boll percentages ranging from 90 to 94%. At 23 DAT, all treatments resulted in equal open boll percentages ranging from 89 to 96%.

Sharpen in combination with Dropp SC resulted in good cotton defoliation. In Louisiana, Sharpen in combination with Dropp SC resulted in significant desiccation at 7 DAT, however resulted in no desiccation by 28 DAT. In Mississippi, Sharpen in combination with Dropp SC resulted in equal desiccation to that observed with Aim and ET. Desiccation was not observed at 23 DAT however. Sharpen can be used as an effective defoliant in cotton production in Louisiana and Mississippi.