

2023 Peanut Weed Management Report

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Peanut weed management trials were conducted at the Oklahoma State University Caddo Research Station near Fort Cobb. Peanuts were planted on May 8, 2023, in 36-inch rows. Preemergence (PRE) treatments were applied immediately after planting. The volunteer cotton trial received an overlay of Prowl (1 qt/A) + Valor (2 oz/A) PRE. All trials received a postemergence (POST) application of Select (1 pt/A) + Dyne-Amic (6 fl oz/A). The preemergence herbicide and Brake tolerance trials received Butyrac 200 (1 pt/A) + Dyne-Amic (6 fl oz/A) POST. These trials were irrigated and maintained throughout the growing season. Trials were visually evaluated for peanut response and weed control. Peanuts were dug, field dried and harvested (10/11/23).

The first trial was established to evaluate preemergence herbicides for peanut response and weed control. Preemergence herbicides evaluated included BAS 85001H, a new PPO herbicide for potential use in peanut. Additional herbicides included Valor, Prowl H2O and Pursuit. Peanut stand reduction was 5% or less for all treatments (data not shown). Peanut injury was initially less than 5% for all treatment (Table 1). Peanut injury four weeks after planting (WAP) was greater than 5% with BAS 85001H at 2 fl oz/A and Valor + Pursuit with and without Prowl H2O. Late-season peanut injury was not observed for any treatment. Palmer amaranth (Table 2) and Texas panicum (Table 3) control was at least 98% all season long with all treatments applied. Ivyleaf morningglory (Table 4) control was 100% (2 WAP) and was at least 97% for all treatments except BAS 85001H (0.68 fl oz/A) and Prowl H2O. When evaluated, 12 WAP ivyleaf morningglory control was 99-100% with all Valor + Pursuit combinations. Peanut yields were greater than 4,500 lbs/A for all treatments except where Prowl H2O was applied alone. (Table 1).

The second trial evaluated various in-season herbicides to control either Xtend or Enlist volunteer cotton in peanuts. Initial peanut injury was 10% with all Gramoxone and Aim treatments (Table 5). All peanut injury had subsided by four weeks after treatment (WAT). Xtend (dicamba tolerant) volunteer cotton control was 94% (4 WAT) and 83% (9 WAT) with 2,4-DB (Table 6). This compared to no control on Enlist (2,4-D tolerant) volunteer cotton (Table 6). Aim alone or in combination with Anthem Flex controlled 80-88% (4 WAT) and 68-73% (9 WAT) of both Xtend and Enlist volunteer cotton. Anthem Flex alone, which contains a low rate of Aim, only controlled 40-50% of either volunteer cotton. Gramoxone control was 55-69% of both Xtend and Enlist volunteer cotton. Control with Gramoxone was less than expected, which may have been due to the 8 fl oz/A rate. Peanut yields were not affected by any of the treatments applied (Table 5).

The third trial evaluated peanut variety response to Brake (fluridone) herbicide applied preemergence. Peanut stand reduction was 5% or less with all treatments applied (data not shown). Peanut stunting was 5% or less season long with Brake on OLé peanut variety (Table 7). Peanut stunting was less than 5% with Span17 peanut variety except with the 1X and 2X rate of Brake (4 WAP). Peanut stunting was 4-6% with the 1X and 2X rate of Brake with Lariat peanut variety.

Visual peanut injury (2-4 WAP) was 6-11% for all varieties. Visual peanut injury was 5% or less for all treatments except the 2X rate of Brake with the Lariat variety 8 WAP and injury was less than 5% for all varieties 12 WAP. Peanut yields were not statistically different for any treatments, however, yields of OLé treated with a 2X rate of Brake PRE were less than 5,000 lbs/A.

Two additional weed management trials were conducted on-farm. In one trial, weed control was at least 95% (Palmer amaranth, volunteer cotton, annual grass control) with various combinations of Anthem Flex (data not shown). In a second trial, late season of control of Palmer amaranth was poor with various combinations of Cobra applied POST (data not shown).

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Table 1. Peanut response to preemergence herbicides, Fort Cobb 2023.

| Treatment | Rate | | 2 WAP | Peanut Injury | 12 WAP | Peanut Yield |
|---|------|---------|------------------|-----------------|-----------------|------------------|
| | | | | 4 WAP | | |
| | | | | % | | (lb/A) |
| BAS 85001H | 0.68 | fl oz/a | 0 | 4 | 0 | 4864 |
| BAS 85001H | 1 | fl oz/a | 3 | 5 | 0 | 5242 |
| BAS 85001H | 2 | fl oz/a | 3 | 6 | 0 | 4254 |
| BAS 85001H | 0.68 | fl oz/a | 0 | 0 | 0 | 5372 |
| + Prowl H2O | 32 | fl oz/a | | | | |
| BAS 85001H | 1 | fl oz/a | 4 | 5 | 0 | 4632 |
| + Prowl H2O | 32 | fl oz/a | | | | |
| Valor EZ | 3 | fl oz/a | 1 | 1 | 0 | 4821 |
| + Prowl H2O | 32 | fl oz/a | 0 | 4 | 0 | 4269 |
| Valor EZ | 3 | fl oz/a | 3 | 0 | 0 | 5147 |
| + Prowl H2O | 32 | fl oz/a | | | | |
| Valor EZ | 3 | fl oz/a | 3 | 8 | 0 | 4951 |
| + Pursuit | 4 | fl oz/a | | | | |
| Valor EZ | 3 | fl oz/a | 1 | 8 | 0 | 5184 |
| + Prowl H2O | 32 | fl oz/a | | | | |
| + Pursuit | 4 | fl oz/a | | | | |
| Valor EZ | 2 | fl oz/a | 0 | 4 | 0 | 5097 |
| + Prowl H2O | 32 | fl oz/a | | | | |
| + Pursuit | 2 | fl oz/a | | | | |
| + Pursuit (At Crack) | 2 | fl oz/a | | | | |
| LSD P= .10 CV | | | 4 157 | 3 56 | NS 0 | 518 9 |
| All treatments applied immediately after planting unless otherwise noted. Entire trial area was treated with Select (8 fl oz/A) & 2,4-DB (16 fl oz/A) postemergence. | | | | | | |

Table 2. Palmer amaranth control with preemergence herbicides, Fort Cobb 2023.

| | | | Palmer Amaranth Control | | |
|---|------|---------|-------------------------|------------------------|----------|
| Treatment | Rate | | 2 WAP | Peanut Injury 4 WAP | 12 WAP |
| | | | % | | |
| BAS 85001H | 0.68 | fl oz/a | 100 | 100 | 98 |
| BAS 85001H | 1 | fl oz/a | 100 | 100 | 100 |
| BAS 85001H | 2 | fl oz/a | 100 | 100 | 100 |
| BAS 85001H | 0.68 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| BAS 85001H | 1 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | 100 | 100 | 98 |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 100 |
| + Pursuit | 4 | fl oz/a | | | |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| + Pursuit | 4 | fl oz/a | | | |
| Valor EZ | 2 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| + Pursuit | 2 | fl oz/a | | | |
| + Pursuit (At Crack) | 2 | fl oz/a | | | |
| LSD P= .10 | | | NS | NS | 3 |
| CV | | | 0 | 0 | 3 |
| All treatments applied immediately after planting unless otherwise noted. Entire trial area was treated with Select (8 fl oz/A) & 2,4-DB (16 fl oz/A) postemergence. | | | | | |

Table 3. Texas panicum control with preemergence herbicides, Fort Cobb 2023.

| Treatment | Rate | | Texas Panicum Control | | |
|---|------|---------|-----------------------|------------------------|----------|
| | | | 2 WAP | Peanut Injury 4 WAP | 12 WAP |
| | | | % | | |
| BAS 85001H | 0.68 | fl oz/a | 100 | 100 | 100 |
| BAS 85001H | 1 | fl oz/a | 100 | 100 | 100 |
| BAS 85001H | 2 | fl oz/a | 100 | 100 | 100 |
| BAS 85001H | 0.68 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| BAS 85001H | 1 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | 100 | 100 | 98 |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 100 |
| + Pursuit | 4 | fl oz/a | | | |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| + Pursuit | 4 | fl oz/a | | | |
| Valor EZ | 2 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| + Pursuit | 2 | fl oz/a | | | |
| + Pursuit (At Crack) | 2 | fl oz/a | | | |
| LSD P= .10 | | | NS | NS | 2 |
| CV | | | 0 | 0 | 1 |
| All treatments applied immediately after planting unless otherwise noted. Entire trial area was treated with Select (8 fl oz/A) & 2,4-DB (16 fl oz/A) postemergence. | | | | | |

Table 4. Ivyleaf morningglory control with preemergence herbicides, Fort Cobb 2023.

| | | | Ivyleaf Morningglory Control | | |
|---|------|---------|------------------------------|------------------------|-----------|
| Treatment | Rate | | 2 WAP | Peanut Injury 4 WAP | 12 WAP |
| | | | % | | |
| BAS 85001H | 0.68 | fl oz/a | 100 | 81 | 80 |
| BAS 85001H | 1 | fl oz/a | 100 | 100 | 95 |
| BAS 85001H | 2 | fl oz/a | 100 | 97 | 89 |
| BAS 85001H | 0.68 | fl oz/a | 100 | 99 | 96 |
| + Prowl H2O | 32 | fl oz/a | | | |
| BAS 85001H | 1 | fl oz/a | 100 | 99 | 89 |
| + Prowl H2O | 32 | fl oz/a | | | |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 93 |
| + Prowl H2O | 32 | fl oz/a | 100 | 85 | 83 |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 93 |
| + Prowl H2O | 32 | fl oz/a | | | |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 100 |
| + Pursuit | 4 | fl oz/a | | | |
| Valor EZ | 3 | fl oz/a | 100 | 100 | 99 |
| + Prowl H2O | 32 | fl oz/a | | | |
| + Pursuit | 4 | fl oz/a | | | |
| Valor EZ | 2 | fl oz/a | 100 | 100 | 100 |
| + Prowl H2O | 32 | fl oz/a | | | |
| + Pursuit | 2 | fl oz/a | | | |
| + Pursuit (At Crack) | 2 | fl oz/a | | | |
| LSD P= .10 | | | NS | 14 | 10 |
| CV | | | 0 | 13 | 9 |
| All treatments applied immediately after planting unless otherwise noted. Entire trial area was treated with Select (8 fl oz/A) & 2,4-DB (16 fl oz/A) postemergence. | | | | | |

Table 5. Peanut response to postemergence herbicides, Fort Cobb 2023.

| Treatment | Rate | | Peanut Injury | | Peanut Yield (lb/A) |
|--------------------------|------|---------|-----------------|-----------------|------------------------|
| | | | 2 WAP | 4 WAP | |
| % | | | | | |
| XTEND Cotton | | | | | |
| Gramoxone | 8 | fl oz/a | 10 | 0 | 5561 |
| 2,4-DB | 24 | fl oz/a | 3 | 0 | 5881 |
| Anthem Flex | 3 | fl oz/a | 4 | 0 | 5750 |
| Aim | 1 | fl oz/a | 10 | 0 | 5460 |
| Anthem Flex | 3 | fl oz/a | 10 | 0 | 5431 |
| + Aim | 0.6 | fl oz/a | | | |
| Enlist Cotton | | | | | |
| Gramoxone | 8 | fl oz/a | 10 | 0 | 5721 |
| 2,4-DB | 24 | fl oz/a | 0 | 0 | 5866 |
| Anthem Flex | 3 | fl oz/a | 4 | 0 | 5503 |
| Aim | 1 | fl oz/a | 10 | 0 | 5721 |
| Anthem Flex | 3 | fl oz/a | 10 | 0 | 5605 |
| + Aim | 0.6 | fl oz/a | | | |
| LSD P= .10 CV | | | 3 37 | NS 0 | NS 9 |

Table 6. Peanut response to postemergence herbicides, Fort Cobb 2023.

| Treatment | Rate | | Volunteer Cotton Control | |
|--------------------------|------|---------|--------------------------|------------------|
| | | | 4 WAT | 9 WAT |
| % | | | | |
| XTEND Cotton | | | | |
| Gramoxone | 8 | fl oz/a | 60 | 60 |
| 2,4-DB | 24 | fl oz/a | 94 | 83 |
| Anthem Flex | 3 | fl oz/a | 45 | 48 |
| Aim | 1 | fl oz/a | 85 | 73 |
| Anthem Flex | 3 | fl oz/a | 80 | 70 |
| + Aim | 0.6 | fl oz/a | | |
| Enlist Cotton | | | | |
| Gramoxone | 8 | fl oz/a | 69 | 55 |
| 2,4-DB | 24 | fl oz/a | 0 | 0 |
| Anthem Flex | 3 | fl oz/a | 50 | 40 |
| Aim | 1 | fl oz/a | 88 | 73 |
| Anthem Flex | 3 | fl oz/a | 80 | 68 |
| + Aim | 0.6 | fl oz/a | | |
| LSD P= .10 CV | | | 8 13 | 11 20 |

Table 7. Peanut response to preemergence herbicides, Fort Cobb 2023.

| Treatment | Rate | 2 WAP | Peanut Stunting | | | Peanut Injury | | | 12 WAP | Peanut Yield | |
|-------------------|------|---------|-----------------|-----------|-----------|---------------|-----------|-----------|-----------|--------------|-----------|
| | | | 4 WAP | 8 WAP | 12 WAP | 2 WAP | 4 WAP | 8 WAP | | | |
| Ole | | | | | | | | | | | |
| Brake 0X | 0 | fl oz/a | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5336 |
| Brake 1X | 16 | fl oz/a | 0 | 0 | 0 | 0 | 9 | 6 | 0 | 0 | 5474 |
| Brake 2X | 32 | fl oz/a | 1 | 1 | 4 | 0 | 11 | 9 | 5 | 4 | 4930 |
| Span 17 | | | | | | | | | | | |
| Brake 0X | 0 | fl oz/a | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5910 |
| Brake 1X | 16 | fl oz/a | 1 | 6 | 3 | 0 | 8 | 8 | 3 | 1 | 5968 |
| Brake 2X | | fl oz/a | 4 | 6 | 4 | 0 | 11 | 10 | 4 | 3 | 5830 |
| Lariat | | | | | | | | | | | |
| Brake 0X | 0 | fl oz/a | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5975 |
| Brake 1X | 16 | fl oz/a | 4 | 6 | 5 | 0 | 8 | 10 | 5 | 1 | 5902 |
| Brake 2X | 32 | fl oz/a | 5 | 6 | 6 | 0 | 11 | 9 | 6 | 3 | 5881 |
| LSD P= .10 | | | 3 | 3 | 2 | NS | 3 | 3 | 2 | 2 | NS |
| CV | | | 138 | 76 | 79 | 0 | 33 | 48 | 67 | 139 | 10 |

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