



# California Wheat Commission

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## **Effect of Postemergence Herbicides and Application Time on Small Grain Injury and Yield**

### **Project Leaders**

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### **Abstract/Summary of Results and Conclusions**

Broadleaf and grassy weeds are problematic in cereal production, posing challenges to growers in the selection of effective herbicides. Many growers are interested in combining different treatments in one tank mixture in order to cut costs and labor. However, when mixing different herbicides, new concerns about crop safety call for more research in tank mixture options. Research was conducted in the San Joaquin Valley in the 2012 production season, generally focusing on the interactions between several different herbicides at varying rates, with and without a surfactant, when applied as a tank mixture. After trials were completed, it was noted that no treatment in any trial caused severe or lasting injury, and what little amount of injury there was did not significantly vary between trials.

Overall, tank mixtures that included both Axial and Express with varying amounts of MCPA Amine, Clarity, and Induce provided excellent control of both grasses and broadleaf weeds. Express alone does not control grasses and Axial alone does not control broadleaves. The herbicide Simplicity without the surfactant Induce was not as effective at controlling Italian ryegrass (*Lolium perenne*) as other treatments, and only the tank mix of Osprey+AMS+Induce controlled rigput brome (*Bromus diandrus*) and volunteer barley (*Hordeum vulgare*). All of the treatments gave excellent control of common chickweed (*Stellaria media*) except ET+NIS, Shark+AMS+NIS, and Axial alone. Control of coast fiddleneck (*Amsinckia menziesii*), shepherd's purse (*Capsella bursa-pastoris*), London rocket (*Sisymbrium irio*), and common groundsel (*Senecio vulgaris*) varied widely across all treatments that did not primarily consist of Express+Shark.

### **Introduction and Objectives**

Wheat is one of the most important crops throughout California, and for small grain producers, weeds pose a significant problem that nearly always requires treatment. Although broadleaf and grassy weeds can be reduced by crop rotation and tillage, these cultural practices are being replaced by greater dependence on herbicides. In addition, this dependence raised concern about the evolution of herbicide-resistant weeds.

Recently, several new small grain herbicides have been released to the market and have been successfully used in different parts of the country. Growers in California are hesitant to use these herbicides because they are unsure about the crop injury that could result from a chemical that they are unfamiliar with. Research in this area of the country was necessary to evaluate the safety of these new herbicides and to provide confidence for California growers.

## Materials and Methods

This project consists of four field experiments conducted in the San Joaquin Valley and one in Tule Lake. Trials were conducted with grower cooperators and at WSREC and IREC field stations to evaluate the efficacy of the herbicides along with crop injury. The experimental design was a randomized block. In every trial, the plots were eight by twenty-five feet and herbicides were applied with CO<sub>2</sub> backpack sprayers with 8002 flat fan nozzles. The tank-mixture and the broadleaf control studies in Visalia was planted on January 13, 2012, and herbicides were applied at 16.8 GPA and 30 PSI to wheat at the 4-8 leaf stage. The grass control study in Visalia had Redwing wheat planted on February 6, 2012, with herbicides applied at 15 GPA and 30 PSI to the 3-4 leaf stage. The broadleaf control study at WSREC used PR 1404 wheat which was planted on January 31, 2012 with herbicides applied at 15 GPA and 30 PSI to the 3-6 leaf stage. Treatments varied between trials, but included the herbicides Express, Osprey, Axial, MCPA Amine, ET, NAI 1295-2, Venue, Shark, Clarity, Simplicity, and 2,4-D, surfactants Induce and Agridex, and ammonium sulfate. Evaluations were taken between 1 and 15 weeks after treatment.

**Budget:** Funding was used almost entirely for employee labor/benefits with a small amount used for supplies.

## Results

When comparing treatments, it was noted that tank mixtures that included both Axial and Express with varying amounts of MCPA Amine, Clarity, and Induce provided excellent control of both grasses and broadleaf weeds, but Express alone does not control grasses and Axial alone does not control broadleaves (Tables 1, 2, 3, 4, 5). In the broadleaf study at WSREC, Shark+Induce+AMS and ET+Induce were the only treatments that did not give excellent control of common chickweed (*Stellaria media*), and instead gave fair - good control (Table 7). The only treatments that gave excellent control of coast fiddleneck (*Amsinckia menziesii*), shepherd's purse (*Capsella bursa-pastoris*), London rocket (*Sisymbrium irio*), and common groundsel (*Senecio vulgaris*) included Shark+Express at varying rates (Tables 8, 9, 10, 11). The herbicide Simplicity without the surfactant Induce was not as effective at controlling Italian ryegrass (*Lolium perenne*) as other treatments, and only the tank mix of Osprey+AMS+Induce controlled ripgut brome (*Bromus diandrus*) and volunteer barley (*Hordeum vulgare*) (Tables 13, 14, 16). All of the treatments in the grass control study gave excellent control of common chickweed (Table 15). In the tank mixture study, all mixtures gave excellent control of all weeds present (Tables 18, 19, 20, 21). No treatment in any trial resulted in any lasting injury to wheat (*Triticum*), and whatever small amounts of injury that there was did not vary significantly between trials (Tables 6, 12, 17, 22).

## Discussion, Conclusions and Recommendations

The low incidence of injury suggests that there is minimal if any antagonism between herbicides used in these tank mixtures. There appears to be adequate safety in all treatments. Research should continue to further verify the safety of new wheat herbicides and when possible to work with chemical companies and DPR to change some labels to allow more flexibility with herbicide application using tank mixes.

Table 1. Wild Oat Percent Control - Broadleaf and Wild Oat Control Interactions in Small Grains, Visalia 2012

Wild Oats ( <i>Avena fatua</i> ) Percent Control						
		20- Jan	26- Jan	2- Feb	6- Mar	16- Apr
Treatments	Rate/A	7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + NIS	0.5 oz + 0.25%	0	0	0	0	0
2. Osprey + NIS	4.75 oz + 0.25%	6	14	64	100	98
3. Axial	16.4 floz	6	20	90	100	100
4. Express + Osprey + NIS	0.25 oz + 4.75 oz + 0.25%	5	19	76	100	99
5. Express + Osprey + NIS	0.375 oz + 4.75 oz + 0.25%	8	19	74	100	100
6. Express + Osprey + NIS	0.5 oz + 4.75 oz + 0.25%	8	16	71	100	100
7. Express + Axial + NIS	0.25 oz + 16.4 floz + 0.25%	8	20	81	100	100
8. Express + Axial + NIS	0.375 oz + 16.4 floz + 0.25%	9	20	81	100	98
9. Express + Axial + NIS	0.5 oz + 16.4 floz + 0.25%	9	18	80	100	100
10. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	9	23	80	100	100
11. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	14	23	84	100	100
12. UTC		0	0	0	0	0

Table 2. Common Chickweed Percent Control– Broadleaf and Wild Oat Control Interactions in Small Grains, Visalia 2012

Common Chickweed ( <i>Stellaria media</i> ) Percent Control						
		20- Jan	26- Jan	2- Feb	6- Mar	16- Apr
Treatments	Rate/A	7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + NIS	0.5 oz + 0.25%	15	40	80	100	100
2. Osprey + NIS	4.75 oz + 0.25%	8	30	73	100	100
3. Axial	16.4 floz	0	0	0	0	0
4. Express + Osprey + NIS	0.25 oz + 4.75 oz + 0.25%	13	40	81	100	100
5. Express + Osprey + NIS	0.375 oz + 4.75 oz + 0.25%	15	39	83	100	100
6. Express + Osprey + NIS	0.5 oz + 4.75 oz + 0.25%	18	38	81	100	100
7. Express + Axial + NIS	0.25 oz + 16.4 floz + 0.25%	9	36	80	100	100
8. Express + Axial + NIS	0.375 oz + 16.4 floz + 0.25%	15	30	80	100	100
9. Express + Axial + NIS	0.5 oz + 16.4 floz + 0.25%	16	34	81	100	100
10. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	33	80	100	100
11. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	14	36	83	100	100
12. UTC		0	0	0	0	0

Table 3. Burning Nettle Percent Control – Broadleaf and Wild Oat Control Interactions in Small Grains, Visalia 2012

Burning Nettle ( <i>Urtica urens</i> ) Percent Control						
		20- Jan	26- Jan	2- Feb	6- Mar	16- Apr
Treatments	Rate/A	7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + NIS	0.5 oz + 0.25%	15	38	78	95	90
2. Osprey + NIS	4.75 oz + 0.25%	8	33	70	90	100
3. Axial	16.4 floz	0	0	0	0	0
4. Express + Osprey + NIS	0.25 oz + 4.75 oz + 0.25%	13	40	79	95	100
5. Express + Osprey + NIS	0.375 oz + 4.75 oz + 0.25%	14	40	80	95	100
6. Express + Osprey + NIS	0.5 oz + 4.75 oz + 0.25%	18	38	80	95	100
7. Express + Axial + NIS	0.25 oz + 16.4 floz + 0.25%	9	36	79	95	100
8. Express + Axial + NIS	0.375 oz + 16.4 floz + 0.25%	15	34	79	95	100
9. Express + Axial + NIS	0.5 oz + 16.4 floz + 0.25%	16	34	75	95	100
10. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	35	79	95	100
11. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	14	34	79	98	100
12. UTC		0	0	0	0	0

Table 4. Coast Fiddleneck Percent Control – Broadleaf and Wild Oat Control Interactions in Small Grains, Visalia 2012

Coast Fiddleneck ( <i>Amsinckia menziesii</i> ) Percent Control						
		20- Jan	26- Jan	2- Feb	6- Mar	16- Apr
Treatments	Rate/A	7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + NIS	0.5 oz + 0.25%	9	33	71	100	100
2. Osprey + NIS	4.75 oz + 0.25%	5	40	70	100	100
3. Axial	16.4 floz	0	0	0	0	0
4. Express + Osprey + NIS	0.25 oz + 4.75 oz + 0.25%	10	38	77	100	100
5. Express + Osprey + NIS	0.375 oz + 4.75 oz + 0.25%	8	30	75	100	100
6. Express + Osprey + NIS	0.5 oz + 4.75 oz + 0.25%	18	35	73	100	100
7. Express + Axial + NIS	0.25 oz + 16.4 floz + 0.25%	10	33	76	100	100
8. Express + Axial + NIS	0.375 oz + 16.4 floz + 0.25%	-	40	80	100	100
9. Express + Axial + NIS	0.5 oz + 16.4 floz + 0.25%	15	35	75	100	100
10. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	-	30	78	100	100
11. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	15	25	75	100	100
12. UTC		0	0	0	0	0

Table 5. Shepherd's Purse Percent Control – Broadleaf and Wild Oat Control Interactions in Small Grains, Visalia 2012

Shepherds'purse ( <i>Capsella bursa-pastoris</i> ) Percent Control						
		20-Jan	26-Jan	2-Feb	6-Mar	16-Apr
Treatments	Rate/A	7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + NIS	0.5 oz + 0.25%	15	40	76	100	100
2. Osprey + NIS	4.75 oz + 0.25%	8	35	70	100	100
3. Axial	16.4 floz	0	0	0	0	0
4. Express + Osprey + NIS	0.25 oz + 4.75 oz + 0.25%	13	40	80	100	100
5. Express + Osprey + NIS	0.375 oz + 4.75 oz + 0.25%	15	39	79	100	100
6. Express + Osprey + NIS	0.5 oz + 4.75 oz + 0.25%	18	38	81	100	100
7. Express + Axial + NIS	0.25 oz + 16.4 floz + 0.25%	9	36	79	100	100
8. Express + Axial + NIS	0.375 oz + 16.4 floz + 0.25%	15	34	81	100	100
9. Express + Axial + NIS	0.5 oz + 16.4 floz + 0.25%	16	35	75	100	100
10. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	34	78	100	100
11. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	14	38	80	100	100
12. UTC		0	0	0	0	0

Table 6. Percent Wheat Injury – Broadleaf and Wild Oat Control Interactions in Small Grains, Visalia 2012

Percent Wheat ( <i>Triticum</i> ) Injury						
		20-Jan	26-Jan	2-Feb	6-Mar	16-Apr
Treatments	Rate/A	7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + NIS	0.5 oz + 0.25%	0	0	0	0	0
2. Osprey + NIS	4.75 oz + 0.25%	9	8	4	0	0
3. Axial	16.4 floz	0	0	5	0	0
4. Express + Osprey + NIS	0.25 oz + 4.75 oz + 0.25%	6	5	2	0	0
5. Express + Osprey + NIS	0.375 oz + 4.75 oz + 0.25%	10	8	3	0	0
6. Express + Osprey + NIS	0.5 oz + 4.75 oz + 0.25%	6	8	4	0	0
7. Express + Axial + NIS	0.25 oz + 16.4 floz + 0.25%	0	0	0	0	0
8. Express + Axial + NIS	0.375 oz + 16.4 floz + 0.25%	0	0	0	0	0
9. Express + Axial + NIS	0.5 oz + 16.4 floz + 0.25%	0	0	0	0	0
10. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	0	0	0	0	0
11. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	0	0	0	0	0
12. UTC		0	0	0	0	0

Table 7. Common Chickweed Percent Control – Broadleaf Control in Wheat, WSREC 2012

<b>Common Chickweed (<i>Stellaria media</i>) Percent Control</b>			
		<b>16- Feb</b>	<b>23- Feb</b>
<b>Treatments</b>	<b>Rates/A</b>	<b>17 DAT</b>	<b>23 DAT</b>
1. ET (2.5EC) + NIS	1 floz +0.25%	46	75
2. NAI 1295-2 (2.5EC) + NIS	1 floz +0.25%	79	95
3. Venue (0.17SC) + NIS	1.2 floz +0.25%	59	98
4. ET + Shark (1.9EW) + NIS	1 floz + 1 floz + 0.25%	76	98
5. ET + Shark + MCPA Amine (3.7EC) + NIS	1 floz + 1 floz + 12 floz + 0.25%	90	99
6. Shark + AMS + NIS	2 floz + 2 lb + 0.25%	65	78
7. Shark + Express (50SG) + AMS + NIS	2 floz + 0.5 oz + 2 lb + 0.25%	93	100
8. Shark + Express + AMS + NIS	2 floz + 0.25 oz + 2 lb + 0.25%	90	100
9. Shark + Express + AMS + NIS	1 floz + 0.5 oz + 2 lb + 0.25%	85	100
10. Shark + Express + AMS + NIS	1 floz + 0.25 oz + 2 lb + 0.25%	84	100
11. Shark + Express + MCPA Amine + AMS + NIS	1 floz + 0.25 oz + 16 floz + 2 lb + 0.25%	83	100
12. Shark + Express + Clarity (4EC) + AMS + NIS	1 floz + 0.25 oz + 3 floz + 2 lb + 0.25%	79	100
13. Express + NIS	0.5 oz + 0.25%	55	100
14. ET + Express + NIS	1 floz + 0.25 oz + 0.25%	95	100
15. ET + Express + NIS	1 floz + 0.5 oz + 0.25%	91	100
16. ET + Express + MCPA Amine + NIS	1 floz + 0.5 oz + 16 floz + 0.25%	88	100
17. Untreated	-----	0	0

Table 8. Coast Fiddleneck Percent Control – Broadleaf Control in Wheat, WSREC 2012

<b>Coast Fiddleneck (<i>Amsinckia menziesii</i>) Percent Control</b>			
		<b>16- Feb</b>	<b>23- Feb</b>
<b>Treatments</b>	<b>Rates/A</b>	<b>17 DAT</b>	<b>23 DAT</b>
1. ET (2.5EC) + NIS	1 floz +0.25%	4	1
2. NAI 1295-2 (2.5EC) + NIS	1 floz +0.25%	8	0
3. Venue (0.17SC) + NIS	1.2 floz +0.25%	4	0
4. ET + Shark (1.9EW) + NIS	1 floz + 1 floz + 0.25%	25	43
5. ET + Shark + MCPA Amine (3.7EC) + NIS	1 floz + 1 floz + 12 floz + 0.25%	70	70
6. Shark + AMS + NIS	2 floz + 2 lb + 0.25%	93	100
7. Shark + Express (50SG) + AMS + NIS	2 floz + 0.5 oz + 2 lb + 0.25%	90	100
8. Shark + Express + AMS + NIS	2 floz + 0.25 oz + 2 lb + 0.25%	100	100
9. Shark + Express + AMS + NIS	1 floz + 0.5 oz + 2 lb + 0.25%	75	85
10. Shark + Express + AMS + NIS	1 floz + 0.25 oz + 2 lb + 0.25%	100	100
11. Shark + Express + MCPA Amine + AMS + NIS	1 floz + 0.25 oz + 16 floz + 2 lb + 0.25%	83	98
12. Shark + Express + Clarity (4EC) + AMS + NIS	1 floz + 0.25 oz + 3 floz + 2 lb + 0.25%	70	100
13. Express + NIS	0.5 oz + 0.25%	47	73
14. ET + Express + NIS	1 floz + 0.25 oz + 0.25%	65	65
15. ET + Express + NIS	1 floz + 0.5 oz + 0.25%	72	83
16. ET + Express + MCPA Amine + NIS	1 floz + 0.5 oz + 16 floz + 0.25%	73	63
17. Untreated	-----	0	0

Table 9. Shepherd's Purse Percent Control – Broadleaf Control in Wheat, WSREC 2012

<b>Shepherds'purse (<i>Capsella bursa-pastoris</i>) Percent Control</b>			
		<b>16- Feb</b>	<b>23- Feb</b>
<b>Treatments</b>	<b>Rates/A</b>	<b>17 DAT</b>	<b>23 DAT</b>
1. ET (2.5EC) + NIS	1 floz +0.25%	30	43
2. NAI 1295-2 (2.5EC) + NIS	1 floz +0.25%	28	55
3. Venue (0.17SC) + NIS	1.2 floz +0.25%	18	23
4. ET + Shark (1.9EW) + NIS	1 floz + 1 floz + 0.25%	28	30
5. ET + Shark + MCPA Amine (3.7EC) + NIS	1 floz + 1 floz + 12 floz + 0.25%	97	99
6. Shark + AMS + NIS	2 floz + 2 lb + 0.25%	93	98
7. Shark + Express (50SG) + AMS + NIS	2 floz + 0.5 oz + 2 lb + 0.25%	98	100
8. Shark + Express + AMS + NIS	2 floz + 0.25 oz + 2 lb + 0.25%	95	100
9. Shark + Express + AMS + NIS	1 floz + 0.5 oz + 2 lb + 0.25%	98	100
10. Shark + Express + AMS + NIS	1 floz + 0.25 oz + 2 lb + 0.25%	93	100
11. Shark + Express + MCPA Amine + AMS + NIS	1 floz + 0.25 oz + 16 floz + 2 lb + 0.25%	92	99
12. Shark + Express + Clarity (4EC) + AMS + NIS	1 floz + 0.25 oz + 3 floz + 2 lb + 0.25%	93	98
13. Express + NIS	0.5 oz + 0.25%	53	63
14. ET + Express + NIS	1 floz + 0.25 oz + 0.25%	79	87
15. ET + Express + NIS	1 floz + 0.5 oz + 0.25%	90	97
16. ET + Express + MCPA Amine + NIS	1 floz + 0.5 oz + 16 floz + 0.25%	78	85
17. Untreated	-----	0	0

Table 10. London Rocket Percent Control – Broadleaf Control in Wheat, WSREC 2012

<b>London Rocket (<i>Sisymbrium irio</i>) Percent Injury</b>			
		<b>16- Feb</b>	<b>23- Feb</b>
<b>Treatments</b>	<b>Rates/A</b>	<b>17 DAT</b>	<b>23 DAT</b>
1. ET (2.5EC) + NIS	1 floz +0.25%	30	44
2. NAI 1295-2 (2.5EC) + NIS	1 floz +0.25%	28	50
3. Venue (0.17SC) + NIS	1.2 floz +0.25%	18	20
4. ET + Shark (1.9EW) + NIS	1 floz + 1 floz + 0.25%	28	33
5. ET + Shark + MCPA Amine (3.7EC) + NIS	1 floz + 1 floz + 12 floz + 0.25%	97	99
6. Shark + AMS + NIS	2 floz + 2 lb + 0.25%	93	98
7. Shark + Express (50SG) + AMS + NIS	2 floz + 0.5 oz + 2 lb + 0.25%	98	100
8. Shark + Express + AMS + NIS	2 floz + 0.25 oz + 2 lb + 0.25%	95	100
9. Shark + Express + AMS + NIS	1 floz + 0.5 oz + 2 lb + 0.25%	98	100
10. Shark + Express + AMS + NIS	1 floz + 0.25 oz + 2 lb + 0.25%	93	98
11. Shark + Express + MCPA Amine + AMS + NIS	1 floz + 0.25 oz + 16 floz + 2 lb + 0.25%	92	98
12. Shark + Express + Clarity (4EC) + AMS + NIS	1 floz + 0.25 oz + 3 floz + 2 lb + 0.25%	93	98
13. Express + NIS	0.5 oz + 0.25%	53	65
14. ET + Express + NIS	1 floz + 0.25 oz + 0.25%	79	88
15. ET + Express + NIS	1 floz + 0.5 oz + 0.25%	90	97
16. ET + Express + MCPA Amine + NIS	1 floz + 0.5 oz + 16 floz + 0.25%	78	88
17. Untreated	-----	0	0

Table 11. Common Groundsel Percent Control – Broadleaf Control in Wheat, WSREC 2012

Common Groundsel ( <i>Senecio vulgaris</i> ) Percent Injury			
		16- Feb	23- Feb
Treatments	Rates/A	17 DAT	23 DAT
1. ET (2.5EC) + NIS	1 floz +0.25%	8	3
2. NAI 1295-2 (2.5EC) + NIS	1 floz +0.25%	10	3
3. Venue (0.17SC) + NIS	1.2 floz +0.25%	13	5
4. ET + Shark (1.9EW) + NIS	1 floz + 1 floz + 0.25%	34	33
5. ET + Shark + MCPA Amine (3.7EC) + NIS	1 floz + 1 floz + 12 floz + 0.25%	53	60
6. Shark + AMS + NIS	2 floz + 2 lb + 0.25%	58	54
7. Shark + Express (50SG) + AMS + NIS	2 floz + 0.5 oz + 2 lb + 0.25%	80	95
8. Shark + Express + AMS + NIS	2 floz + 0.25 oz + 2 lb + 0.25%	85	95
9. Shark + Express + AMS + NIS	1 floz + 0.5 oz + 2 lb + 0.25%	80	100
10. Shark + Express + AMS + NIS	1 floz + 0.25 oz + 2 lb + 0.25%	70	90
11. Shark + Express + MCPA Amine + AMS + NIS	1 floz + 0.25 oz + 16 floz + 2 lb + 0.25%	80	83
12. Shark + Express + Clarity (4EC) + AMS + NIS	1 floz + 0.25 oz + 3 floz + 2 lb + 0.25%	75	80
13. Express + NIS	0.5 oz + 0.25%	63	83
14. ET + Express + NIS	1 floz + 0.25 oz + 0.25%	50	70
15. ET + Express + NIS	1 floz + 0.5 oz + 0.25%	80	95
16. ET + Express + MCPA Amine + NIS	1 floz + 0.5 oz + 16 floz + 0.25%	-	-
17. Untreated	-----	0	0

Table 12. Percent Wheat Injury – Broadleaf Control in Wheat, WSREC 2012

Percent Wheat ( <i>Triticum aestivum</i> ) Injury				
		16- Feb	23- Feb	3- Apr
Treatments	Rates/A	17 DAT	23 DAT	63 DAT
1. ET (2.5EC) + NIS	1 floz +0.25%	6	2	0
2. NAI 1295-2 (2.5EC) + NIS	1 floz +0.25%	6	3	0
3. Venue (0.17SC) + NIS	1.2 floz +0.25%	5	2	0
4. ET + Shark (1.9EW) + NIS	1 floz + 1 floz + 0.25%	6	3	0
5. ET + Shark + MCPA Amine (3.7EC) + NIS	1 floz + 1 floz + 12 floz + 0.25%	7	3	0
6. Shark + AMS + NIS	2 floz + 2 lb + 0.25%	7	3	0
7. Shark + Express (50SG) + AMS + NIS	2 floz + 0.5 oz + 2 lb + 0.25%	6	3	0
8. Shark + Express + AMS + NIS	2 floz + 0.25 oz + 2 lb + 0.25%	5	2	0
9. Shark + Express + AMS + NIS	1 floz + 0.5 oz + 2 lb + 0.25%	5	2	0
10. Shark + Express + AMS + NIS	1 floz + 0.25 oz + 2 lb + 0.25%	5	3	0
11. Shark + Express + MCPA Amine + AMS + NIS	1 floz + 0.25 oz + 16 floz + 2 lb + 0.25%	4	1	0
12. Shark + Express + Clarity (4EC) + AMS + NIS	1 floz + 0.25 oz + 3 floz + 2 lb + 0.25%	6	2	0
13. Express + NIS	0.5 oz + 0.25%	0	0	0
14. ET + Express + NIS	1 floz + 0.25 oz + 0.25%	5	2	0
15. ET + Express + NIS	1 floz + 0.5 oz + 0.25%	3	2	0
16. ET + Express + MCPA Amine + NIS	1 floz + 0.5 oz + 16 floz + 0.25%	3	1	0
17. Untreated	-----	0	0	0



Table 13. Italian Ryegrass Percent Control – Grass Control in Wheat, Visalia 2012

<b>Italian Ryegrass (<i>Lolium perenne</i>) Percent Control</b>				
		<b>22-Feb</b>	<b>29-Feb</b>	<b>16-Apr</b>
<b>Treatments</b>	<b>Rates/A</b>	<b>10 DAT</b>	<b>23 DAT</b>	<b>39 DAT</b>
1. Simplicity (4SC) + NIS	6.75 floz + 0.5%	0	10	93
2. Simplicity + AMS + NIS	6.75 floz + 1.5 lb ai + 0.5%	6	14	90
3. Simplicity + COC	6.75 floz + 1.25%	6	20	80
4. Osprey (4.5WG) + AMS + NIS	4.75 oz + 1.5 lb ai + 0.5%	5	19	95
5. Axial (0.42EC)	16.4 floz	8	19	95
6. Simplicity + Express (50SG) + NIS	6.75 floz + 0.25 oz + 0.5%	8	16	95
7. Simplicity + Express + NIS	6.75 floz + 0.5 oz + 0.5%	8	20	95
8. Express + MCPA Amine (3.7EC) + Axial	0.25 oz + 1 pt + 16.4 floz	9	20	91
9. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	9	18	93
10. UTC		0	0	0

Table 14. Ripgut Brome Percent Control – Grass Control in Wheat, Visalia 2012

<b>Ripgut Brome (<i>Bromus diandrus</i>) Percent Control</b>				
		<b>22-Feb</b>	<b>29-Feb</b>	<b>16-Apr</b>
<b>Treatments</b>	<b>Rates/A</b>	<b>10 DAT</b>	<b>23 DAT</b>	<b>39 DAT</b>
1. Simplicity (4SC) + NIS	6.75 floz + 0.5%	0	10	0
2. Simplicity + AMS + NIS	6.75 floz + 1.5 lb ai + 0.5%	4	14	0
3. Simplicity + COC	6.75 floz + 1.25%	6	20	0
4. Osprey (4.5WG) + AMS + NIS	4.75 oz + 1.5 lb ai + 0.5%	8	19	100
5. Axial (0.42EC)	16.4 floz	8	19	0
6. Simplicity + Express (50SG) + NIS	6.75 floz + 0.25 oz + 0.5%	8	16	0
7. Simplicity + Express + NIS	6.75 floz + 0.5 oz + 0.5%	8	20	0
8. Express + MCPA Amine (3.7EC) + Axial	0.25 oz + 1 pt + 16.4 floz	11	20	0
9. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	10	18	0
10. UTC		0	0	0

Table 15. Common Chickweed Percent Control – Grass Control in Wheat, Visalia 2012

<b>Common Chickweed (<i>Stellaria media</i>) Percent Control</b>				
		<b>22-Feb</b>	<b>29-Feb</b>	<b>16-Apr</b>
<b>Treatments</b>	<b>Rates/A</b>	<b>10 DAT</b>	<b>23 DAT</b>	<b>39 DAT</b>
1. Simplicity (4SC) + NIS	6.75 floz + 0.5%	53	80	100
2. Simplicity + AMS + NIS	6.75 floz + 1.5 lb ai + 0.5%	53	70	100
3. Simplicity + COC	6.75 floz + 1.25%	40	70	100
4. Osprey (4.5WG) + AMS + NIS	4.75 oz + 1.5 lb ai + 0.5%	47	75	100
5. Axial (0.42EC)	16.4 floz	50	70	100
6. Simplicity + Express (50SG) + NIS	6.75 floz + 0.25 oz + 0.5%	75	90	100
7. Simplicity + Express + NIS	6.75 floz + 0.5 oz + 0.5%	67	70	100
8. Express + MCPA Amine (3.7EC) + Axial	0.25 oz + 1 pt + 16.4 floz	70	80	100
9. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	73	80	100
10. UTC		0	0	0

Table 16. Volunteer Barley Percent Control – Grass Control in Wheat, Visalia 2012

<b>Volunteer Barley (<i>Hordeum vulgare</i>) Percent Control</b>		
		<b>16-Apr</b>
<b>Treatments</b>	<b>Rates/A</b>	<b>39 DAT</b>
1. Simplicity (4SC) + NIS	6.75 floz + 0.5%	0
2. Simplicity + AMS + NIS	6.75 floz + 1.5 lb ai + 0.5%	0
3. Simplicity + COC	6.75 floz + 1.25%	0
4. Osprey (4.5WG) + AMS + NIS	4.75 oz + 1.5 lb ai + 0.5%	100
5. Axial (0.42EC)	16.4 floz	0
6. Simplicity + Express (50SG) + NIS	6.75 floz + 0.25 oz + 0.5%	0
7. Simplicity + Express + NIS	6.75 floz + 0.5 oz + 0.5%	0
8. Express + MCPA Amine (3.7EC) + Axial	0.25 oz + 1 pt + 16.4 floz	0
9. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	0
10. UTC		0

Table 17. Percent Wheat Injury – Grass Control in Wheat, Visalia 2012

<b>Percent Wheat (<i>Triticum</i>) Injury</b>				
		<b>22-Feb</b>	<b>29-Feb</b>	<b>16-Apr</b>
<b>Treatments</b>	<b>Rates/A</b>	<b>10 DAT</b>	<b>23 DAT</b>	<b>39 DAT</b>
1. Simplicity (4SC) + NIS	6.75 floz + 0.5%	0	0	0
2. Simplicity + AMS + NIS	6.75 floz + 1.5 lb ai + 0.5%	0	0	0
3. Simplicity + COC	6.75 floz + 1.25%	0	0	0
4. Osprey (4.5WG) + AMS + NIS	4.75 oz + 1.5 lb ai + 0.5%	0	0	0
5. Axial (0.42EC)	16.4 floz	0	0	0
6. Simplicity + Express (50SG) + NIS	6.75 floz + 0.25 oz + 0.5%	0	0	0
7. Simplicity + Express + NIS	6.75 floz + 0.5 oz + 0.5%	0	0	0
8. Express + MCPA Amine (3.7EC) + Axial	0.25 oz + 1 pt + 16.4 floz	0	0	0
9. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	0	0	0
10. UTC		0	0	0

Table 18. Wild Oat Percent Control – Tank-Mixture Study for Broadleaf and Wild Oat Control in Small Grains, Visalia 2012

Wild Oats ( <i>Avena fatua</i> ) Percent Control						
Treatments	Rate/A	20-Jan	26-Jan	2-Feb	6-Mar	16-Apr
		7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	15	79	100	100
2. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	10	16	79	100	100
3. Express + MCPA Amine + Axial	0.25 oz + 1 pt + 16.4 floz	10	15	71	100	98
4. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	10	15	76	100	100
5. Express + MCPA Amine + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	10	15	79	100	100
6. Express + MCPA Amine + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	10	16	79	100	100
7. Express + MCPA Amine + Axial	0.25 oz + 12 floz + 16.4 floz	9	15	80	100	100
8. Express + MCPA Amine + Axial	0.5 oz + 12 floz + 16.4 floz	10	15	79	100	100
9. Express + 2,4-D + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	15	80	100	100
10. Express + 2,4-D + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	10	15	79	100	100
11. Express + 2,4-D + Axial	0.25 oz + 1 pt + 16.4 floz	10	15	80	100	100
12. Express + 2,4-D + Axial	0.5 oz + 1 pt + 16.4 floz	10	15	78	100	100
13. Express + 2,4-D + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	10	15	79	100	100
14. Express + 2,4-D + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	10	15	78	100	100
15. Express + 2,4-D + Axial	0.25 oz + 12 floz + 16.4 floz	10	15	79	100	100
16. Express + 2,4-D + Axial	0.5 oz + 12 floz + 16.4 floz	10	15	78	100	100
17. Express + Clarity + Axial + NIS	0.25 oz + 4 floz + 16.4 floz + 0.25%	10	15	80	100	100
18. Express + Clarity + Axial + NIS	0.5 oz + 4 floz + 16.4 floz + 0.25%	10	15	80	100	100
19. Express + Clarity + Axial	0.25 oz + 4 floz + 16.4 floz	10	15	79	100	100
20. Express + Clarity + Axial	0.5 oz + 4 floz + 16.4 floz	10	15	76	100	100
21. UTC	-----	0	0	0	0	0

Table 19. Common Chickweed Percent Control – Tank-Mixture Study for Broadleaf and Wild Oat Control in Small Grains, Visalia 2012

Common Chickweed ( <i>Stellaria media</i> ) Percent Control						
Treatments	Rate/A	20-Jan	26-Jan	2-Feb	6-Mar	16-Apr
		7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	38	85	100	100
2. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	10	46	83	100	100
3. Express + MCPA Amine + Axial	0.25 oz + 1 pt + 16.4 floz	10	40	78	100	100
4. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	10	45	84	100	100
5. Express + MCPA Amine + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	10	41	84	100	100
6. Express + MCPA Amine + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	10	41	84	100	100
7. Express + MCPA Amine + Axial	0.25 oz + 12 floz + 16.4 floz	9	40	81	100	100
8. Express + MCPA Amine + Axial	0.5 oz + 12 floz + 16.4 floz	10	48	85	100	100
9. Express + 2,4-D + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	40	79	100	100
10. Express + 2,4-D + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	10	43	85	100	100
11. Express + 2,4-D + Axial	0.25 oz + 1 pt + 16.4 floz	10	40	85	100	100
12. Express + 2,4-D + Axial	0.5 oz + 1 pt + 16.4 floz	10	44	85	100	100
13. Express + 2,4-D + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	10	40	83	100	100
14. Express + 2,4-D + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	10	48	81	100	100
15. Express + 2,4-D + Axial	0.25 oz + 12 floz + 16.4 floz	10	43	83	100	100
16. Express + 2,4-D + Axial	0.5 oz + 12 floz + 16.4 floz	10	40	83	100	100
17. Express + Clarity + Axial + NIS	0.25 oz + 4 floz + 16.4 floz + 0.25%	10	43	81	100	100
18. Express + Clarity + Axial + NIS	0.5 oz + 4 floz + 16.4 floz + 0.25%	10	43	84	100	100
19. Express + Clarity + Axial	0.25 oz + 4 floz + 16.4 floz	10	44	85	100	100
20. Express + Clarity + Axial	0.5 oz + 4 floz + 16.4 floz	10	46	83	100	100
21. UTC	-----	0	0	0	0	0

Table 20. Burning Nettle Percent Control – Tank-Mixture Study for Broadleaf and Wild Oat Control in Small Grains, Visalia 2012

Burning Nettle ( <i>Urtica urens</i> ) Percent Control						
Treatments	Rate/A	20-Jan	26-Jan	2-Feb	6-Mar	16-Apr
		7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	41	86	100	100
2. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	10	48	86	100	100
3. Express + MCPA Amine + Axial	0.25 oz + 1 pt + 16.4 floz	10	41	85	100	100
4. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	10	48	88	100	100
5. Express + MCPA Amine + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	10	46	85	100	100
6. Express + MCPA Amine + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	10	44	89	100	100
7. Express + MCPA Amine + Axial	0.25 oz + 12 floz + 16.4 floz	9	44	84	100	100
8. Express + MCPA Amine + Axial	0.5 oz + 12 floz + 16.4 floz	10	49	86	100	100
9. Express + 2,4-D + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	44	86	100	100
10. Express + 2,4-D + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	10	46	86	100	100
11. Express + 2,4-D + Axial	0.25 oz + 1 pt + 16.4 floz	10	43	87	100	100
12. Express + 2,4-D + Axial	0.5 oz + 1 pt + 16.4 floz	10	46	86	100	100
13. Express + 2,4-D + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	10	40	84	100	100
14. Express + 2,4-D + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	10	48	84	100	100
15. Express + 2,4-D + Axial	0.25 oz + 12 floz + 16.4 floz	10	39	85	100	100
16. Express + 2,4-D + Axial	0.5 oz + 12 floz + 16.4 floz	10	44	88	100	100
17. Express + Clarity + Axial + NIS	0.25 oz + 4 floz + 16.4 floz + 0.25%	10	44	85	100	100
18. Express + Clarity + Axial + NIS	0.5 oz + 4 floz + 16.4 floz + 0.25%	10	41	85	100	100
19. Express + Clarity + Axial	0.25 oz + 4 floz + 16.4 floz	10	43	83	100	100
20. Express + Clarity + Axial	0.5 oz + 4 floz + 16.4 floz	10	48	85	100	100
21. UTC	-----	0	0	0	0	0

Table 21. Shepherd's Purse Percent Control – Tank-Mixture Study for Broadleaf and Wild Oat Control in Small Grains, Visalia 2012

Shepherd's purse ( <i>Capsella bursa-pastoris</i> ) Percent Control						
Treatments	Rate/A	20-Jan	26-Jan	2-Feb	6-Mar	16-Apr
		7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	38	84	100	100
2. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	10	48	81	100	100
3. Express + MCPA Amine + Axial	0.25 oz + 1 pt + 16.4 floz	10	41	76	100	100
4. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	10	45	84	100	100
5. Express + MCPA Amine + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	10	41	84	100	100
6. Express + MCPA Amine + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	10	40	81	100	100
7. Express + MCPA Amine + Axial	0.25 oz + 12 floz + 16.4 floz	9	40	81	100	100
8. Express + MCPA Amine + Axial	0.5 oz + 12 floz + 16.4 floz	10	48	85	100	100
9. Express + 2,4-D + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	10	40	79	100	100
10. Express + 2,4-D + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	10	43	84	100	100
11. Express + 2,4-D + Axial	0.25 oz + 1 pt + 16.4 floz	10	40	82	100	100
12. Express + 2,4-D + Axial	0.5 oz + 1 pt + 16.4 floz	10	44	83	100	100
13. Express + 2,4-D + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	10	40	83	100	100
14. Express + 2,4-D + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	10	48	81	100	100
15. Express + 2,4-D + Axial	0.25 oz + 12 floz + 16.4 floz	10	41	81	100	100
16. Express + 2,4-D + Axial	0.5 oz + 12 floz + 16.4 floz	10	40	83	100	100
17. Express + Clarity + Axial + NIS	0.25 oz + 4 floz + 16.4 floz + 0.25%	10	43	80	100	100
18. Express + Clarity + Axial + NIS	0.5 oz + 4 floz + 16.4 floz + 0.25%	10	45	83	100	100
19. Express + Clarity + Axial	0.25 oz + 4 floz + 16.4 floz	10	43	83	100	100
20. Express + Clarity + Axial	0.5 oz + 4 floz + 16.4 floz	10	46	83	100	100
21. UTC	-----	0	0	0	0	0

Table 22. Percent Wheat Injury – Tank-Mixture Study for Broadleaf and Wild Oat Control in Small Grains, Visalia 2012

Percent Wheat ( <i>Triticum</i> ) Injury						
		20- Jan	26- Jan	2- Feb	6- Mar	16- Apr
Treatments	Rate/A	7 DAT	13 DAT	21 DAT	54 DAT	95 DAT
1. Express + MCPA Amine + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	0	0	0	0	0
2. Express + MCPA Amine + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	0	0	0	0	0
3. Express + MCPA Amine + Axial	0.25 oz + 1 pt + 16.4 floz	0	0	0	0	0
4. Express + MCPA Amine + Axial	0.5 oz + 1 pt + 16.4 floz	0	0	0	0	0
5. Express + MCPA Amine + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	0	0	0	0	0
6. Express + MCPA Amine + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	0	0	0	0	0
7. Express + MCPA Amine + Axial	0.25 oz + 12 floz + 16.4 floz	0	0	0	0	0
8. Express + MCPA Amine + Axial	0.5 oz + 12 floz + 16.4 floz	0	0	0	0	0
9. Express + 2,4-D + Axial + NIS	0.25 oz + 1 pt + 16.4 floz + 0.25%	0	0	0	0	0
10. Express + 2,4-D + Axial + NIS	0.5 oz + 1 pt + 16.4 floz + 0.25%	0	0	0	0	0
11. Express + 2,4-D + Axial	0.25 oz + 1 pt + 16.4 floz	0	0	0	0	0
12. Express + 2,4-D + Axial	0.5 oz + 1 pt + 16.4 floz	0	0	0	0	0
13. Express + 2,4-D + Axial + NIS	0.25 oz + 12 floz + 16.4 floz + 0.25%	0	0	0	0	0
14. Express + 2,4-D + Axial + NIS	0.5 oz + 12 floz + 16.4 floz + 0.25%	0	0	0	0	0
15. Express + 2,4-D + Axial	0.25 oz + 12 floz + 16.4 floz	0	0	0	0	0
16. Express + 2,4-D + Axial	0.5 oz + 12 floz + 16.4 floz	0	0	0	0	0
17. Express + Clarity + Axial + NIS	0.25 oz + 4 floz + 16.4 floz + 0.25%	0	0	0	0	0
18. Express + Clarity + Axial + NIS	0.5 oz + 4 floz + 16.4 floz + 0.25%	0	0	0	0	0
19. Express + Clarity + Axial	0.25 oz + 4 floz + 16.4 floz	0	0	0	0	0
20. Express + Clarity + Axial	0.5 oz + 4 floz + 16.4 floz	0	0	0	0	0
21. UTC	-----	0	0	0	0	0

**Table 23: IREC Wild oat /Broadleaf Herbicide Study - 2012**

Treatment	Rate (product/A)	Injury			% Control of Wild oat	
		6/8	6/14	6/20	7/24	8/9
Express + NIS (Induce)	0.5 oz + 0.5%	10.0	3.8	5.5	12.5	12.5
Axial	16.4 floz	16.3	6.3	4.8	99.3	98.8
Simplicity + NIS (Induce)	6.75 floz + 0.5%	8.8	3.8	1.3	51.3	47.5
Simplicity + NIS (Induce) + AMS	6.75 floz + 0.5% + 1.5 lbs	8.8	3.8	5.0	76.3	71.3
Simplicity + COC	6.75 floz + 0.5%	1.3	3.8	2.5	57.5	54.5
Puma	10.5 floz	26.3	17.5	9.3	90.5	85.0
Osprey + NIS (Induce) + AMS	4.75 oz + 0.5% + 1.5 lbs	38.8	41.3	31.3	83.8	76.3
Express + Axial	0.5 oz + 16.4 floz	7.3	3.8	5.8	89.0	85.9
MCPA Amine + Axial	16 floz + 16.4 floz	22.5	11.3	7.3	97.0	95.5
Weedar 64 + Axial	16 floz + 16.4 floz	23.8	15.0	11.3	93.8	96.3
Weedone 638 + Axial	16 floz + 16.4 floz	16.3	12.5	7.5	99.5	98.9
Banvel + Axial	4 floz + 16.4 floz	28.8	11.3	10.0	97.7	93.1
Express + MCPA Amine + Axial	0.25 oz + 12 floz + 16.4 floz	12.5	7.5	5.5	97.5	94.3
Express + MCPA Amine + Axial	0.5 oz + 12 floz + 16.4 floz	3.8	5.0	4.3	98.8	94.5
Express + Weedar 64 + Axial	0.25 oz + 12 floz + 16.4 floz	17.5	11.3	3.0	96.5	93.0
Express + Weedar 64 + Axial	0.5 oz + 12 floz + 16.4 floz	3.8	6.3	5.0	97.8	96.0
Express + Weedone 638 + Axial	0.25 oz + 12 floz + 16.4 floz	8.8	8.8	6.0	99.0	97.0
Express + Weedone 638 + Axial	0.5 oz + 12 floz + 16.4 floz	7.5	7.5	7.5	92.0	88.0
Express + Banvel + Axial	0.25 oz + 4 floz + 16.4 floz	17.3	13.8	5.3	99.3	95.9
Express + Banvel + Axial	0.5 oz + 4 floz + 16.4 floz	12.5	6.3	8.5	90.0	89.5
Express + MCPA Amine +Banvel + Axial	0.3 oz + 12 floz + 2oz + 16 oz	16.3	12.5	5.0	98.3	96.0
UTC	-----	0.0	2.5	1.3	0.0	0.0
<b>LSD 0.05</b>		<b>2.3</b>	<b>1.9</b>	<b>1.7</b>	<b>3.5</b>	<b>4.2</b>