Running Title: Hemp response 2,4-D dicamba

**Evaluating the vegetative and reproductive response of hemp (*Cannabis sativa*) to simulated off-target events of growth regulator herbicides 2,4-D and dicamba**

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**Supplementary Materials**

Table 1. Hemp fresh and dry weight at the time of trial termination (harvest) from simulated off-target rates of 2,4-D and dicamba in a greenhouse study evaluating vegetative effects of growth regulator herbicides in Columbus, OH from 2020-2022.a,b

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Hemp weight | | | | | |
| Herbicide | Rate | Fresh | | | Dry | | |
|  |  | ————— g ————— | | | | | | |
| Untreated | 0 | 86 | ab | 24 | | ab |
| Dicamba | 1x | 39 | c | 9 | | c |
| Dicamba | 1/10x | 76 | ab | 22 | | b |
| Dicamba | 1/100x | 86 | ab | 25 | | ab |
| Dicamba | 1/1000x | 74 | b | 22 | | b |
| Dicamba | 1/10,000x | 92 | ab | 26 | | ab |
| Dicamba | 1/100,000x | 85 | ab | 26 | | ab |
| 2,4-D | 1x | 46 | c | 12 | | c |
| 2,4-D | 1/10x | 86 | ab | 24 | | ab |
| 2,4-D | 1/100x | 94 | a | 28 | | a |
| 2,4-D | 1/1000x | 90 | ab | 27 | | ab |
| 2,4-D | 1/10,000x | 93 | ab | 26 | | ab |
| 2,4-D | 1/100,000x | 81 | ab | 23 | | b |

a Means within a column followed by a different letter are significantly different based on the *lsmeans* function at α = 0.05.

bHerbicide rate fractions are relative to the full labeled field use rates (1x) of 560 g ae ha-1 of dicamba and 1060 g ae ha-1 of 2,4-D.

Table 2. Hemp fresh weight at harvest and metabolite levels in dried flowers from simulated off-target rates of 2,4-D in a growth chamber study evaluating vegetative and reproductive effects of growth regulator herbicides in Columbus, OH from 2020-2022.a,b,c

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Herbicide | Rate | Fresh weight | | | CBD | | CBDA | | THC | | | THCA | | |
|  |  | — g — | | | ——————— % w/w ——————— | | | | | | | | | |
| Untreated | 0 | 115 | a | 1.19 | | a | 10.1 | b | | 0.127 | a | | 0.500 |
| 2,4-D | 1x | 14 | b | --- | |  | --- |  | | --- |  | | --- |
| 2,4-D | 1/10x | 102 | a | 0.88 | | a | 11.4 | ab | | 0.093 | b | | 0.527 |
| 2,4-D | 3/100x | 94 | a | 0.91 | | a | 10.4 | b | | 0.107 | ab | | 0.496 |
| 2,4-D | 1/100x | 118 | a | 0.85 | | a | 9.70 | b | | 0.113 | ab | | 0.483 |
| 2,4-D | 3/1000x | 115 | a | 1.02 | | a | 9.90 | b | | 0.107 | ab | | 0.480 |
| 2,4-D | 1/1000x | 90 | a | 1.12 | | a | 11.0 | ab | | 0.113 | ab | | 0.513 |
| 2,4-D | 3/10,000x | 99 | a | 1.02 | | a | 10.7 | ab | | 0.120 | ab | | 0.530 |
| 2,4-D | 1/10,000x | 102 | a | 1.91 | | a | 10.3 | b | | 0.107 | ab | | 0.513 |
| 2,4-D | 3/100,000x | 112 | a | 1.19 | | a | 12.2 | a | | 0.113 | ab | | 0.560 |
| 2,4-D | 1/100,000x | 100 | a | 0.94 | | a | 10.3 | b | | 0.107 | ab | | 0.500 |

a Means within a column followed by a different letter are significantly different based on the *lsmeans* function at α = 0.05.

bHerbicide rate fractions are relative to the full labeled field use rates (1x) of 560 g ae ha-1 of dicamba and 1060 g ae ha-1 of 2,4-D.