# Environmental Horticulture Program Research Project Sheet

https://www.ir4project.org/ehc/ehc-registration-support-research/env-hort-extension-resources/



**Project Name:** Fatty Acid Herbicide Efficacy

| New | | Ongoing | X | Completed | | Duration if ongoing or completed: | 2009-2011, 2018-2023 |
|---|---|---|---|---|---|---|---|

**Project Description:**

Fatty acid herbicides may be alternatives for glyphosate-resistant weeds and management of other post emergent weeds. However, refinement of application rates, volumes and use of adjuvants is needed to determine optimal efficacy.

**Research Project Abstract (if available):**

n/a

**Target Species (Phytotoxicity, or common and Latin name of arthropod, pathogen, weed):**

Bluegrass, Annual (*Poa annua*)
Chickweed (*Stellaria media*)
Crabgrass (*Digitaria sp.*)
Crabgrass, Smooth (*Digitaria ischaemum*)
Horsetail, Field (*Equisetum arense*)
Pigweed, Redroot (*Amaranthus retroflexus*)
Spurge, Spotted/Prostrate (*Chamaesyce maculata*)

**Target Crops (list tested crops if ongoing or completed project)**

n/a

**Target Product(s)(list tested products or numbered compounds if ongoing or completed project)**

Axxe (Ammonium nonanoate)
Fireworxx 80 (Caprylic acid (44%) + capric acid (36%))
Homeplate (caprylic acid + capric acid)
Scythe (Pelargonic acid)
Suppress T&O Herbicide (Caprylic acid (47%) + capric acid (32%))

**Product Registration and Research Status**

| | Fully Screened (also includes standards) | Partially Screened through IR-4 [1] | Need Data Across Species ? |
|---|---|---|---|
| Labeled Generally & Commercialized | | Axxe<br>Fireworxx 80<br>Homeplate<br>Scythe<br>Suppress T&O Herbicide | |
| Labeled Generally But NOT Commercialized | | | |
| Labeled for Specific Weeds& Commercialized | | | |
| Labeled for Specific Weeds but NOT Commercialized | | | |
| Not yet registered or Labeled | | | |
| No longer available for development | | | |

* IR-4 Data contributed to registration decision – either adding pest to label or not pursuing further research

1 At least one species screened fully

| Area | Characteristic | Pro | Con |
|---|---|---|---|
| Availability & effectiveness of alternative management tools | | | |
| | | | |
| | | | |
| | | | |
| Damage potential of target | | | |
| Performance and crop safety of proposed products (from other systems) | Efficacy of fatty acid herbicides characterized | | X |
| | | | |
| Compatibility with IPM, resistance management programs | | | |
| | | | |
| Economics | | | |
| Geographic distribution | | | |
| Manufacturer interest in labeling products | | | |
| Other | | | |
| Project Status: Over the last several years, 5 products tested with good control of young broadleaf, but limited impact on annual grasses. Adding acidifier (adjuvant), decreased control.<br>Next potential steps: combining fatty acid herbicides with sethoxydim to grass management | | | |

**IR-4 Efficacy Trials to Date**

Average rating on a scale of 1 – 5 with 1 = 0 to about 50% efficacy (not effective) and 5 = 95 to 100 efficacy (very effective); minimum to maximum rating; number of trials (See table on next page). For product/insect combinations that are blank, IR-4 has not screened this combination.

'Labeled' indicates that this disease species or genera is listed on the label. A rating of 2 or lower is considered unacceptable efficacy (*red text*). A rating of 3 or higher is considered commercially acceptable (black text). Non-labeled, completed product/disease combinations (3 or more trials) with an average rating of 3 or higher are highlighted with **green text**. For disease/product combinations that are blank, IR-4 has not screened this combination.

| MOA | Product (Active Ingredients) | Chickweed (*Stellaria media*) | Crabgrass (*Digitaria sp.*) | Crabgrass, Smooth (*Digitaria ischaemum*) | Horsetail, Field (*Equisetum arense*) | Pigweed, Redroot (*Amaranthus retroflexus*) | Spurge, Spotted/Prostrate (*Chamaesyce maculata*) |
|---|---|---|---|---|---|---|---|
| WSSA 17 | Axxe (Pelargonic acid) | 5.0 (5 - 5) n1 | 5.0 (5 - 5) n1 | *1.0 (1 - 1) n1* | *1.0 (1 - 1) n1* | *1.0 (1 - 1) n1* | *1.0 (1 - 1) n1* |
| | Scythe (Pelargonic acid) | | | 5.0 (5 - 5) n1 | 4.0 (4 - 4) n1 | 4.0 (4 - 4) n1 | 5.0 (5 - 5) n1 |
| unknown | Fireworxx 80 (Caprylic acid (44%) + capric acid (36%)) | | | 5.0 (5 - 5) n1 | 5.0 (5 - 5) n1 | 5.0 (5 - 5) n1 | 5.0 (5 - 5) n1 |
| | Homeplate (caprylic acid + capric acid) | 5.0 (5 - 5) n1 | 5.0 (5 - 5) n1 | | | | |
| | Suppress T&O Herbicide (Caprylic acid (47%) + capric acid (32%)) | | | 5.0 (5 - 5) n1 | 5.0 (5 - 5) n1 | 5.0 (5 - 5) n1 | 5.0 (5 - 5) n1 |