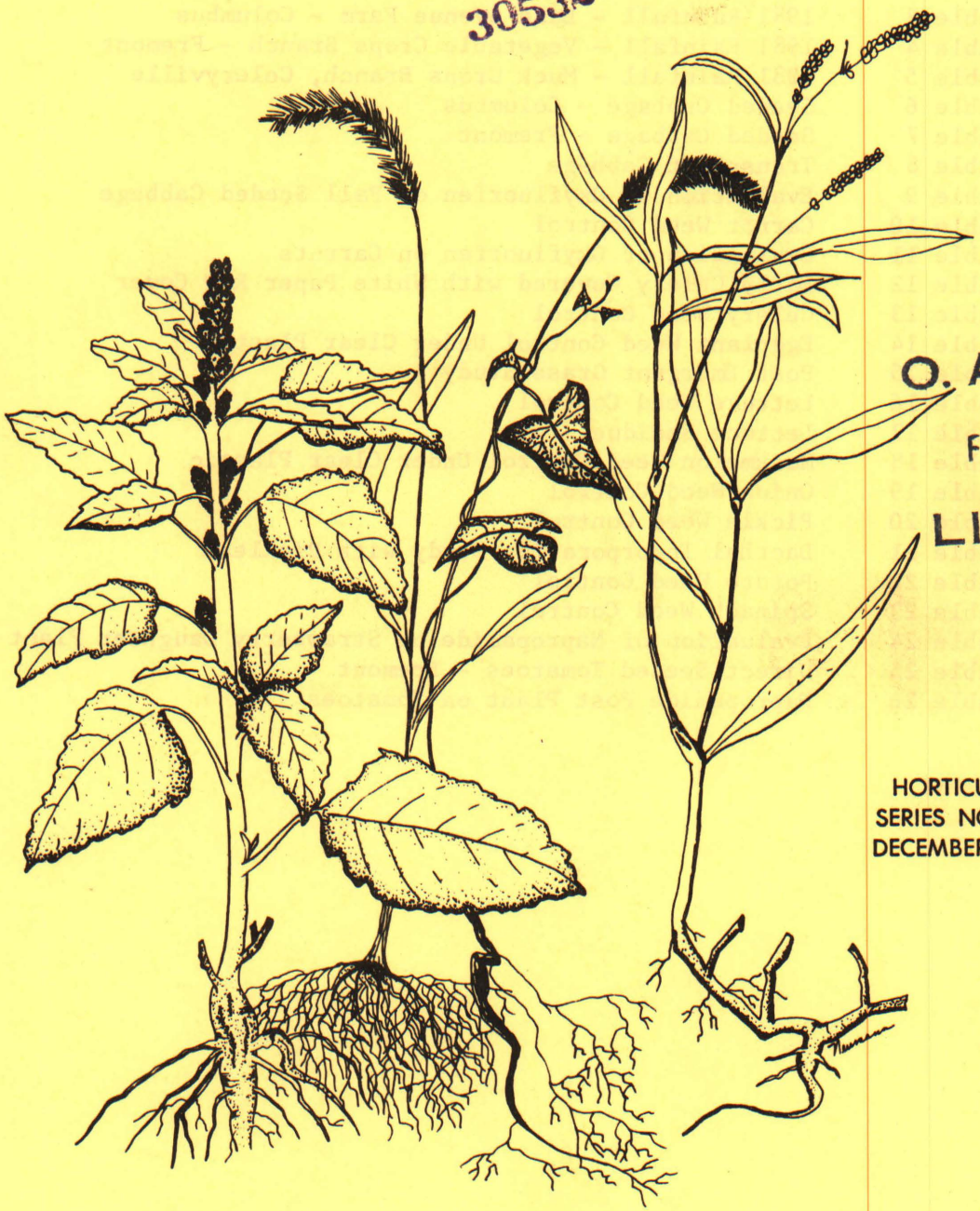
# RESULTS OF WEED CONTROL STUDIES IN VEGETABLE CROPS -- 1981









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## LISTING OF TABLES






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# Results of Field Experiments in Vegetable Weed Control - 1981

Stanley F. Gorske[1]

## General Materials and Methods

Abbreviations for herbicide application methods:
PPI - Preplant incorporated
Pre - Preemergence to the weed and crop
Post - Postemergence to the weed and crop
All rates are in pounds of active ingredient per acre.

Sprayer:
Treatments were applied with a tractor-drawn sprayer. Spray pressure was 30 psi and spray volume was 24 gpa. Some treatments were applied with a $CO_2$ back pack type sprayer with a gpa of 42 and 30 psi.

Weed Ratings:
Weed counts were made by counting the number of weeds in a 1 square foot wire frame. Two counts were made for each replicate. Counts were made approximately 30 days after treatment. All plots were cultivated and hoed regularly after weed counts were taken (except unweeded check).

Statistical Analysis:
Duncans Multiple Range Test at the 5% level was performed on all experiments.

Appreciation is given to the following people for their assistance in conducting these research studies:

Mr. Gerald Myers - Farm Superintendant, Columbus
Mr. Richard Hassel - Branch Manager, Celeryville
Mr. C.C. Willer - Branch Manager, Fremont
Mr. Jerry Baron - Graduate Research Associate
Ms. Debbie Armstrong - Graduate Research Associate

The cover illustration is by Ms. Jackie TerMeer, formerly of the Department of Horticulture, The Ohio State University.

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Table 1. Chemicals Used in Experiments

| Common Name | Trade Name |
|---|---|
| alachlor | Lasso |
| bensulide | Prefar |
| CDAA | Randox |
| CDEC | Vegadex |
| CGA 82725* | Ciga-Geigy |
| chloramben | Amiben/Vegiben |
| chloroxuron | Tenoran |
| chlorpropham | Furloe, Chloro IPC |
| cyanazine | Bladex |
| DCPA | Dacthal |
| diclofop | Hoelon |
| dinoseb | Premerge |
| diphenamid | Enide |
| EPTC | Eptam |
| ethalfluralin | Sonalin |
| fluazifop-butyl | Fusilade |
| glyphosate | Roundup |
| linuron | Lorox |
| metolachlor | Dual |
| metribuzin | Sencor/Lexone |
| Mon 097* | Monsanto |
| napropamide | Devrinol |
| naptalam | Alanap |
| nitrofen | Tok |
| oryzalin | Surflan |
| oxyfluorfen | Goal |
| pebulate | Tillam |
| pendimethalin | Prowl |
| PPG 844* | PPG Industries |
| prometryn | Caparol |
| propachlor | Ramrod, Bexton |
| sethoxydim | Poast |
| S-734* | Uniroyal |
| trifluralin | Treflan |
| DPX-5184* | DuPont |

*Experimental compound, name of manufacturer is listed in place of trade name.

Table 2. Weeds Mentioned in Report

| Common Name | Scientific Name |
|---|---|
| Barnyard Grass | *Echinochloa crugalli* |
| Canada Thistle | *Cirsium arvense* |
| Common Lambsquarter | *Chenopodium album* |
| Common Mallow | *Malva neglecta* |
| Common Purslane | *Portulaca oleracea* |
| Common Ragweed | *Ambrosia artemisiifolia* |
| Fall Panicum | *Panicum dichotomiflorum* |
| Field Bindweed | *Convolvulus arvensis* |
| Knotweed | *Polygonum aviculare* |
| Ladysthumb Smartweed | *Polygonum persicaria* |
| Large Crabgrass | *Digitaria sanguinalis* |
| Lovegrass | *Eragrostis cilianensis* |
| Mayweed | *Anthemis cotula* |
| Pennsylvania Smartweed | *Polygonum pensylvanicum* |
| Redroot Pigweed | *Amaranthus retroflexus* |
| Shepardspurse | *Capella bursa-pastoris* |
| Sida spp. | *Sida spp.* |
| Smallflower Galinsoga | *Galinsoga parviflora* |
| Velvetleaf | *Abutilon theophrasti* |
| Venice Mallow | *Hibiscus trionum* |
| Yellow Foxtail | *Setaria lutescens* |
| Yellow Nutsedge | *Cyperus esculentus* |
| Yellow Woodsorrel | *Oxalis stricta* |
| Witchgrass | *Panicum capillare* |

1981 Rainfall - Lane Avenue Farm, Columbus

| Day | May | June | July | August | September | October |
|---|---|---|---|---|---|---|
| 1 | | .6 | | | .7 | |
| 2 | | .1 | | | .3 | |
| 3 | | .6 | | | .3 | |
| 4 | | | | | .7 | |
| 5 | | | | | | |
| 6 | | 1.1 | .4 | | | |
| 7 | | | | | | |
| 8 | | | | | .5 | |
| 9 | | .8 | | | | |
| 10 | | 1.0 | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | .7 | 2.1 | | | .7 | |
| 16 | | | | | | |
| 17 | | .2 | | | | |
| 18 | | | | | .3 | |
| 19 | .5 | | | | | |
| 20 | | | .6 | | | |
| 21 | | | 1.5 | | | |
| 22 | | .6 | .5 | | | |
| 23 | | | | | | .5 |
| 24 | | | | | | |
| 25 | | .3 | | | | |
| 26 | .5 | | .5 | | | |
| 27 | | | .2 | | | |
| 28 | 1.5 | | .2 | .3 | | |
| 29 | | | | | | |
| 30 | | .2 | | | | |
| 31 | | | | | | |
| TOTAL | 3.2 | 7.6 | 3.9 | .3 | 3.5 | .5 |

1981 Rainfall - Vegetable Crops Branch, Fremont

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | | | | | | .61 |
| 2 | | | | | .03 | .58 |
| 3 | .19 | | .49 | | .11 | .34 |
| 4 | .14 | | | | | .19 |
| 5 | | .37 | .50 | | .04 | .02 |
| 6 | | | | | .02 | |
| 7 | | | | | | .16 |
| 8 | .27 | | 2.78 | | | |
| 9 | | .03 | .46 | .06 | | |
| 10 | .07 | 1.12 | | | .26 | |
| 11 | .16 | .13 | | | | |
| 12 | .03 | | .17 | | | |
| 13 | 1.06 | | 1.72 | | | |
| 14 | .02 | .55 | | | .09 | .92 |
| 15 | | .05 | | | | |
| 16 | .18 | | .15 | | | .67 |
| 17 | .12 | | | | | 2.72 |
| 18 | | | | | | 1.21 |
| 19 | .07 | | | .49 | | |
| 20 | | | .06 | .67 | | |
| 21 | | | 1.69 | .03 | | .09 |
| 22 | .22 | .02 | | | | .02 |
| 23 | .05 | | | | | |
| 24 | .03 | | 1.23 | | | |
| 25 | T | | | .11 | | |
| 26 | | .14 | | | | .29 |
| 27 | .38 | .65 | | .37 | .15 | |
| 28 | .54 | .02 | T | .07 | .19 | |
| 29 | .02 | .15 | | | .84 | .43 |
| 30 | | .02 | | | .82 | .13 |
| 31 | | | | | .13 | |
| TOTAL | 3.55 | 3.25 | 9.25 | 1.80 | 2.68 | 8.38 |

1981 Rainfall - Celeryville

| Day | April | May | June | July | August |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | .08 | | |
| 3 | .21 | | | | |
| 4 | .30 | | | | .20 |
| 5 | | .58 | .45 | | |
| 6 | | | | | .04 |
| 7 | | | | | |
| 8 | .15 | | 2.50 | | |
| 9 | | .08 | .45 | .50 | |
| 10 | .16 | .65 | | | |
| 11 | .65 | .44 | | | .27 |
| 12 | .17 | | | | |
| 13 | 1.00 | | 2.57 | .20 | |
| 14 | | .45 | | | |
| 15 | | .16 | | | |
| 16 | .15 | | | | |
| 17 | .16 | | | | .70 |
| 18 | .04 | | | | |
| 19 | | | | 1.05 | |
| 20 | | | | | |
| 21 | | | 1.54 | | |
| 22 | | | .22 | .90 | |
| 23 | .08 | | | | |
| 24 | .05 | | | | |
| 25 | | | 1.62 | | |
| 26 | | .28 | | | |
| 27 | .15 | .30 | | .13 | |
| 28 | .70 | .07 | | .47 | |
| 29 | .18 | .22 | | | |
| 30 | | | | | |
| 31 | | | | | 2.50 |
| TOTAL | 4.15 | 3.23 | 9.43 | 3.25 | 3.71 |

# SEEDED CABBAGE

| | |
|---|---|
| Location: | Lane Avenue Farm |
| Cultivar: | Golden Acre |
| Seeded: | April 16 |
| Treated: | April 16 |
| Weed Counts & Phyto Evaluation: | May 18 |
| Harvested: | Plot was not harvested due to water damage |
| Soil Type: | Brookston Silty Clay Loam, 2% O.M. |
| Plot Size: | 1 row 25' long, 3' apart, plants thinned to 1' apart |
| Plot Design: | Randomized Complete Block with 3 reps |

Summary: Due to the extremely wet spring in Columbus there was considerable variation in the cabbage growth. This plot was abandon prior to harvest due to repeated flooding and water injury to the cabbage.

DCPA treated plants were very healthy and vigorously growing. These plants were the largest in the plot. There was no apparent difference due to rate. Trifluralin treated cabbage was approximately 10% smaller than that receiving DCPA. Bensulide treatments varied between the reps but generally looked similar to trifluralin. Reduced germination and growth was obvious in all plots where napropamide or pendimethalin was used. Napropamide also did a good job on reducing the growth of galinsoga. Plants were less than 0.5" tall, chlorotic, and not growing. CDAA treated plants appear to be healthy and similar to bensulide. Incorporation of pendimethalin appeared to safen its use.

| TREATMENT | | | NO. WEEDS PER 1 FT.$^2$ | |
|---|---|---|---|---|
| Herbicide | Method | Lb ai/a | Barnyardgrass | Galinsoga |
| Unweeded Check | --- | --- | 1.0 | 25.7 |
| Handweeded Check | --- | --- | 0.0 | 0.0 |
| DCPA | Pre | 8.0 | 0.0 | 14.0 |
| DCPA | Pre | 10.0 | 0.0 | 17.5 |
| Bensulide | PPI | 4.0 | 2.2 | 31.8 |
| Napropamide | PPI | 2.0 | 0.0 | 17.3 |
| Trifluralin + | PPI | 0.5 | 0.0 | 22.5 |
| Napropamide | PPI | 1.0 | | |
| CDAA | Pre | 4.0 | 0.3 | 10.8 |
| Pendimethalin | PPI | 1.0 | 0.0 | 17.3 |
| Pendimethalin | Pre | 1.0 | 0.0 | 15.0 |
| Trifluralin | PPI | 1.0 | 0.0 | 29.8 |
| LSD 5% | | | 1.1 | 12.8 |

SEEDED CABBAGE FREMONT

Location: Vegetable Crops Branch
Cultivar: Titanic 90 and Roundup
Seeded: May 7
Treated: PPI and PRE May 7
Post 3 leaf June 4
Weed Counts: June 17
Harvested: September 24
Soil Type: Sandy Loam, 3% O.M.
Plot Size: 1 row 30' long, rows 3' apart
Plot Design: Randomized complete block with 4 reps

Summary: Cabbage was evaluated 40 days after seeding for crop phytotoxicity. Alachlor at seeding or applied post at the 3 leaf stage was apparently not phytotoxic. Cabbage treated with metolachlor at the 3 leaf stage had some leaf curling and was slightly stunted. Bensulide treated cabbage looked good. Napropamide severely stunted the cabbage and germination was reduced approximately 25%. When the rate of napropamide is reduced to 1 lb. and put in combination with trifluralin the injury is eliminated. Germination and growth with CDAA was excellent.

When pendimethalin was incorporated into the soil cabbage germination and growth was good. However, if pendimethalin was left on the soil surface germination was reduced by 75%. Cabbage growth was reduced by 50%. Trifluralin was also phytotoxic to seeded cabbage during 1981. Germination was reduced by approximately 10% and growth was retarded by about 25%.

When the crop was blocked (thinned) most of the stand reduction was nullified. Pendimethalin Pre had the fewest number of plants per row. Kraut cabbage has a long growing season. This gave the stunted cabbage of June plenty of time to grow and "catch up" to the non-stunted treatments. At harvest the lowest yielding treatment was pendimethalin pre. The highest yielding was pendimethalin PPI.

| TREATMENT | | | WEEDS/1 FT.$^2$ | | | YIELD/30' ROW | | |
|---|---|---|---|---|---|---|---|---|
| Herbicide | Method | Lb ai/A | Large Crabgrass | Common Ragweed | Yellow Wood Sorrel | Total BRDL | No. Heads | Total Head Wt. in Lbs. |
| Unweeded Check | --- | --- | 0.1 | 3.0 | 1.9 | 5.9 | 0.0 | 0.0 |
| Handweeded Check | --- | --- | 0.0 | 0.0 | 0.0 | 0.0 | 21.3 | 119.6 |
| Alachlor | Pre | 2.00 | 0.0 | 2.0 | 0.0 | 2.5 | 21.0 | 111.7 |
| DCPA | Pre | 8.00 | 0.0 | 3.3 | 0.1 | 4.0 | 20.8 | 113.4 |
| DCPA + | Pre | 8.00 | 0.0 | 2.1 | 0.0 | 2.6 | 20.8 | 116.3 |
| Alachlor | Post | | | | | | | |
| | 3 leaf stage | 2.00 | | | | | | |
| DCPA + | Pre | 8.00 | 0.1 | 3.0 | 0.0 | 3.3 | 21.3 | 118.4 |
| Metolachlor | Post | | | | | | | |
| | 3 leaf stage | 2.00 | | | | | | |
| Bensulide | PPI | 4.00 | 0.0 | 3.4 | 2.9 | 7.0 | 20.3 | 112.8 |
| Napropamide | PPI | 2.00 | 0.1 | 2.5 | 1.5 | 5.0 | 20.0 | 122.0 |
| Trifluralin + | PPI | .50 | 0.0 | 2.3 | 1.3 | 4.3 | 20.5 | 130.6 |
| Napropamide | PPI | 1.00 | | | | | | |
| CDAA | Pre | 4.00 | 0.3 | 1.9 | 0.6 | 3.8 | 21.8 | 123.2 |
| Pendimethalin | PPI | 1.00 | 0.3 | 3.5 | 0.1 | 3.9 | 20.8 | 136.8 |
| Pendimethalin | Pre | 1.00 | 0.0 | 2.6 | 0.1 | 3.5 | 19.3 | 99.9 |
| Trifluralin | PPI | 1.00 | 0.0 | 3.3 | 0.1 | 4.0 | 22.3 | 121.3 |
| LSD 5% | | | NSD | 1.5 | 1.5 | 2.4 | 2.8 | 26.8 |

# TRANSPLANT CABBAGE

Location: Lane Avenue Farm
Cultivar: Golden Acre
Transplanted: April 16
Treated: PPI & Post Plant - April 16
Weed Count & Phyto Evaluation: May 18
Harvested: June 30
Soil Type: Brookston Silty Clay Loam, 2% O.M.
Plot Size: 1 row 25' long, rows 3' apart, plants on 12" centers
Plot Design: Randomized Complete Block with 3 reps

Summary: Due to the extremely wet spring in Columbus there was considerable variation in the cabbage growth. The variation existed between reps of the same treatments. Alachlor and metolachlor were the only herbicides that completely controlled galinsoga. Napropamide did a very good job of stunting the growth of galinsoga. Plants were less than 0.5" tall, chlorotic and not growing. Oxyfluorfen was applied post emergent to the galinsoga. The galinsoga was burnt but not killed by this treatment. There was no apparent phyto to the cabbage.

Cabbage treated with trifluralin, DCPA, alachlor and metolachlor was very vigorous and did not show any phytotoxic symptoms. Bensulide treated cabbage was stunted approximately 20%. CDAA granules stunted cabbage similar to bensulide, however the EC formulation was not stunted. Napropamide treated cabbage appeared to be approximately 10% stunted (May 18). However there was variation between reps with this treatment. Combining napropamide with trifluralin showed little change. Pendimethalin caused no apparent phyto to the cabbage. DCPA plus oxyfluorfen WP treatments have low yields which are not a true reflection of this treatment potential. I feel that the harvest data for these 2 treatments should be ignored.

| TREATMENT | | | NO. WEEDS PER 1 FT.$^2$ | | YIELD PER 12 PLANTS |
|---|---|---|---|---|---|
| Herbicide | Method | Lb ai/A | Barnyardgrass | Galinsoga | Total Weight (lbs) |
| Unweeded Check | --- | ---- | 1.3 | 15.7 | 6.7 |
| Handweeded Check | --- | ---- | 0.0 | 0.0 | 14.3 |
| Trifluralin | PPI | 1.00 | 0.0 | 16.3 | 21.9 |
| DCPA + | Post plant | 10.00 | 0.0 | 8.7 | 18.1 |
| Oxyfluorfen EC | Post | 0.13 | | | |
| DCPA | Post plant | 10.00 | 0.0 | 8.7 | 24.5 |
| Alachlor | Post plant | 2.00 | 0.0 | 0.0 | 23.6 |
| Metolachlor | Post plant | 2.00 | 0.0 | 0.0 | 10.9 |
| Bensulide | PPI | 4.00 | 0.2 | 6.7 | 8.1 |
| CDAA EC | Directed after planting | 4.00 | 0.0 | 9.2 | 18.0 |
| CDAA G | Post plant | 4.00 | 0.3 | 2.3 | 13.8 |
| Napropamide | PPI | 2.00 | 0.3 | 8.5 | 7.6 |
| Trifluralin + | PPI | 0.50 | 0.0 | 6.7 | 10.3 |
| Napropamide | PPI | 1.00 | | | |
| Pendimethalin | PPI | 1.00 | 0.0 | 6.5 | 11.9 |
| DCPA + | Post plant | 10.00 | 0.0 | 4.5 | 12.6 |
| Oxyfluorfen WP | Post | 0.13 | | | |
| DCPA + | Post plant | 10.00 | 0.0 | 4.5 | 7.4 |
| Oxyfluorfen WP | Post | 0.25 | | | |
| LSD 5% | | | 0.6 | 8.7 | 11.4 |

# EVALUATION OF OXYFLUORFEN ON FALL SEEDED CABBAGE

Location: Lane Avenue Farm
Cultivar: Golden Acre
Planted: July 9
Treated: Pre: July 9
3 leaf stage: July 30
6 leaf stage: August 7
9 leaf stage: August 21
Phyto Ratings: August 3 - 3 leaf treatment
August 14 - 6 leaf treatment
August 27 - 9 leaf treatment
Harvested: November 5
Soil Type: Brookston Silty Clay Loam, 2% O.M.
Plot Size: 1 row 25' long, 3' apart. plants thinned to 1' apart.
Plot Design: Randomized complete block with 3 reps.

Summary: The EC formulation of oxyfluorfen was very injurious to the cabbage at all ages tested. The WP formulation was injurious at the 3 leaf stage. Cabbage tolerance to oxyfluorfen increased with age of the plant. Injury symptoms were bleaching to necrosis of leaf tissue. Cabbage plants were able to outgrow this early injury and produce an acceptable yield. There was a tremendous amount of variability within treatments which accounts for no significant differences.

| TREATMENT | | | | YIELD/15' ROW |
|---|---|---|---|---|
| Herbicide[1] | Method | Lb ai/A | Plant Phyto[2] | Total wt. (lbs) |
| Unweeded Check | - | - | 10.0 | 5.3 |
| Handweeded Check | - | - | 10.0 | 12.2 |
| DCPA | Pre | 10.0 | 10.0 | 16.1 |
| Oxyfluorfen WP | 3 leaf | 0.13 | 7.7 | 10.0 |
| Oxyfluorfen WP | 3 leaf | 0.25 | 5.7 | 7.6 |
| Oxyfluorfen EC | 3 leaf | 0.13 | 4.7 | 9.1 |
| Oxyfluorfen EC | 3 leaf | 0.25 | 3.7 | 12.4 |
| Nitrofen WP | 3 leaf | 1.0 | 10.0 | 13.9 |
| Oxyfluorfen WP | 6 leaf | 0.13 | 9.7 | 16.0 |
| Oxyfluorfen WP | 6 leaf | 0.25 | 7.7 | 12.3 |
| Oxyfluorfen EC | 6 leaf | 0.13 | 4.3 | 17.7 |
| Oxyfluorfen EC | 6 leaf | 0.25 | 5.0 | 15.1 |
| Nitrofen WP | 6 leaf | 1.0 | 10.0 | 14.0 |
| Oxyfluorfen WP | 9 leaf | 0.13 | 9.7 | 23.5 |
| Oxyfluorfen WP | 9 leaf | 0.25 | 8.3 | 7.3 |
| Oxyfluorfen EC | 9 leaf | 0.13 | 4.0 | 16.3 |
| Oxyfluorfen EC | 9 leaf | 0.25 | 3.3 | 10.6 |
| Nitrofen WP | 9 leaf | 1.0 | 10.0 | 24.9 |
| LSD 5% | | | 2.6 | NSD |

[1] ALL OXYFLUORFEN AND NITROFEN TREATMENTS RECEIVED DCPA 10 LBS AI/A PRE.

[2] 10 = no crop injury, 1 = complete crop kill

# CARROT WEED CONTROL

Location: Muck Crops Branch
Cultivar: Scarlet Nantees
Seeded: May 4
Treated: May 5 Pre
June 3 Post
June 17 Trt #12
Weed Counts: June 3 (Trt #1,2,5,6,12,13)
June 17 (Trt #3,4,7-11)
July 1 (Trt #11)
Harvested: July 29
Soil Type: Carlisle Muck, 75% O.M., pH 5.3
Plot Size: 3 rows 16" apart on 60" bed 18' long
Plot Design: Randomized Complete Block with 3 reps

Summary: There was no visible injury from any of the pre treatments. Linuron post at 0.5 or 1 lb. did not cause any phyto. Oxyfluorfen WP at both rates caused some leaf burning, 0.13 lb-10% injury, 0.25 lb-20% injury. Prometryn treated carrots had some minor leaf curling and were slightly chlorotic. Metribuzin also caused some minor tip burn to the carrot leaves.

This plot was subjected to heavy amounts of rain and was flooded at least once in June. Weed control was not what would ordinarily be expected. This data should then be looked at in terms of a very wet season. Prometryn did a poor job of controlling fall panicum when applied post emergence (2-3" tall). All of the herbicides tested did a poor job of controlling grasses. Treatments 12 and 13 do not have yields. They are actually treatments #3 and 10 that had weed counts taken before the post treatments were applied.

| | TREATMENT | | | NO. WEEDS PER 1 FT.$^2$ | | | | | | | YIELD IN LBS/15 FT. OF ROW | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Herbicide | Method | Lb ai/A | Large Crabgrass | Fall Panicum | Total Grass | Common Lambsquarter | Common Purslane | Red Root Pigweed | Total BRDL | Total Wt. | Root Wt. |
| 1 | Unweeded Check | ---- | ---- | 3.5 | 3.2 | 6.8 | 4.8 | 12.8 | 2.7 | 23.2 | 3.8 | 1.7 |
| 2 | Handweeded Check | ---- | ---- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.3 | 11.7 |
| 3 | Linuron + | Pre | 2.00 | 0.5 | 8.2 | 9.2 | 0.0 | 0.2 | 0.0 | 0.3 | 17.4 | 9.9 |
| | Linuron | Post | 0.50 | | | | | | | | | |
| 4 | Linuron + | Pre | 2.00 | 0.0 | 4.5 | 4.7 | 0.0 | 0.2 | 0.0 | 0.2 | 21.5 | 12.4 |
| | Linuron | Post | 1.00 | | | | | | | | | |
| 5 | Chlorpropham | Pre | 4.00 | 2.3 | 8.5 | 11.3 | 7.3 | 6.2 | 2.7 | 16.7 | 27.4 | 15.9 |
| 6 | Chlorpropham | Pre | 6.00 | 1.5 | 6.8 | 9.2 | 4.5 | 7.3 | 3.7 | 15.8 | 26.3 | 15.9 |
| 7 | Linuron + | Pre | 2.00 | 1.0 | 6.7 | 7.8 | 0.0 | 0.2 | 0.0 | 0.3 | 17.8 | 9.7 |
| | Oxyfluorfen WP | Post | 0.13 | | | | | | | | | |
| 8 | Linuron + | Pre | 2.00 | 0.8 | 4.0 | 5.5 | 0.0 | 0.5 | 0.0 | 0.5 | 18.8 | 10.5 |
| | Oxyfluorfen WP | Post | 0.25 | | | | | | | | | |
| 9 | Prometryn + | Pre | 1.00 | 0.2 | 8.5 | 9.0 | 0.0 | 0.5 | 0.0 | 1.0 | 18.5 | 9.8 |
| | Prometryn | Post | 1.00 | | | | | | | | | |
| 10 | Prometryn + | Pre | 2.00 | 0.0 | 4.7 | 4.8 | 0.0 | 0.5 | 0.0 | 0.8 | 20.7 | 11.8 |
| | Prometryn | Post | 1.00 | | | | | | | | | |
| 11 | Linuron + | Pre | 2.00 | 0.3 | 6.5 | 7.2 | 0.0 | 0.0 | 0.0 | 0.0 | 11.9 | 6.3 |
| | Metribuzin + | Post 3 leaf | 0.25 | | | | | | | | | |
| | Metribuzin | Post 6 leaf | 0.50 | | | | | | | | | |
| 12 | Linuron | Pre | 2.00 | 1.8 | 9.8 | 12.0 | 0.7 | 8.0 | 0.2 | 9.7 | ---- | ---- |
| 13 | Prometryn | Pre | 1.00 | 2.2 | 6.7 | 9.2 | 0.8 | 7.0 | 1.0 | 9.2 | ---- | ---- |
| LSD 5% | | | | 1.7 | NSD | 5.9 | 4.5 | 3.5 | 1.7 | 7.5 | 8.7 | 5.0 |

# EVALUATION OF OXYFLUORFEN ON CARROTS

Location: Muck Crops Branch
Cultivar: Scarlet Nantees
Seeded: June 19
Treated: June 19-Pre treatment
July 15-Post 3 leaf stage
July 29-Post 6 leaf stage
Harvested: August 26
Soil Type: Carlisle Muck, 75% O.M., pH 5.3
Plot Size: 3 rows 16" apart on 60" bed 18' long
Plot Design: Randomized Complete Block with 3 reps

Summary: Oxyfluorfen WP was safer than the EC formulation. At the 3 leaf stage 0.13 lb. oxyfluorfen WP caused leaf bleaching and burning. Injury from the 0.25 and 0.5 lb. rates (WP) was more severe but not as bad as the EC formulation. Delaying application until the 6 leaf stage provided more safety. Even at this stage the EC formulation was more phytotoxic to the foliage than the WP formulation. Root weights were not as severely affected. These post applications did not kill the growing points of the carrots and recovery was rapid. Nitrofen caused very little injury to the carrots.

| TREATMENT | | | | YIELD PER 15 FT. OF ROW | |
|---|---|---|---|---|---|
| Herbicide[1] | Method | Lb ai/A | Carrot Phyto[2] | Total Wt. (lbs.) | Root Wt. (lbs.) |
| Handweeded Check | --- | ---- | 10.0 | 25.8 | 14.2 |
| Linuron | Pre | 2.00 | 10.0 | 25.1 | 14.1 |
| Oxyfluorfen WP | Post 3 leaf | 0.13 | 7.5 | 22.2 | 12.2 |
| Oxyfluorfen WP | Post 3 leaf | 0.25 | 6.0 | 23.7 | 13.5 |
| Oxyfluorfen WP | Post 3 leaf | 0.50 | 6.0 | 23.8 | 13.5 |
| Oxyfluorfen EC | Post 3 leaf | 0.13 | 6.0 | 17.2 | 9.1 |
| Oxyfluorfen EC | Post 3 leaf | 0.25 | 3.0 | 17.1 | 9.9 |
| Oxyfluorfen EC | Post 3 leaf | 0.50 | 2.0 | 18.7 | 9.2 |
| Nitrofen WP | Post 3 leaf | 1.00 | 9.5 | 25.7 | 13.9 |
| Oxyfluorfen WP | Post 6 leaf | 0.13 | 8.5 | 23.2 | 13.3 |
| Oxyfluorfen WP | Post 6 leaf | 0.25 | 7.5 | 21.7 | 12.9 |
| Oxyfluorfen WP | Post 6 leaf | 0.50 | 6.0 | 25.2 | 14.4 |
| Oxyfluorfen EC | Post 6 leaf | 0.13 | 6.0 | 22.8 | 13.2 |
| Oxyfluorfen EC | Post 6 leaf | 0.25 | 4.0 | 19.6 | 11.1 |
| Oxyfluorfen EC | Post 6 leaf | 0.50 | 3.0 | 15.6 | 8.9 |
| Nitrofen WP | Post 6 leaf | 1.00 | 9.5 | 21.4 | 12.4 |
| LSD 5% | | | | 5.0 | 2.9 |

[1] ALL OXYFLUORFEN AND NITROFEN TREATMENTS RECEIVED LINURON 2 LBS AI/A PRE.

[2] 10=no crop injury, 1=complete crop kill

# EARLY CELERY COVERED WITH WHITE PAPER ROW COVER

| | |
|---|---|
| Location: | Muck Crops Branch |
| Cultivar | 5270 H |
| Transplanted: | April 7 |
| Treated & Covered: | April 7 |
| Removed Row Cover: | May 4 |
| Plot Size: | 1 row 200' long, rows 3' apart |
| Plot Design: | Non replicated trial |
| Harvested: | July 2, 10 & 20 |
| Soil Type: | Carlisle Muck, 75% O.M., pH. 5.3 |

Summary: The use of CDEC granules under plastic tunnels for celery early production in Ohio is a standard practice. CDAA was looked at as a possible replacement. Celery treated with CDAA was severely stunted with leaf burning and epinasty. Injury from the 6 lb. ai/A rate was more severe than the 4 lb. rate.

| TREATMENT | | YIELD AVERAGE WT./PLANT (LBS.) | | |
|---|---|---|---|---|
| Herbicide | Lbs ai/A | July 2 | July 10 | July 20 |
| CDEC (granules) | 4 | 1.64 | 2.07 | 3.01 |
| CDAA (granules) | 4 | 1.06 | 1.19 | 1.91 |
| CDAA (granules) | 6 | 0.68 | 0.79 | 1.33 |

# CELERY WEED CONTROL

Location: Muck Crops Branch
Cultivar: 683
Transplanted: April 27
Treated: May 4-Post Plant, June 3-Post
Weed Counts: June 3 (Trt #1,2,9-17)
June 17 (Trt #3-8)
Harvested: July 29
Soil Type: Carlisle Muck, 75% O.M., pH 5.3
Plot Size: 1 row 25' long with 1 guard row between each treatment row
Plot Design: Randomized Complete Block with 3 reps

Summary: CDAA applied post plant caused a slight burning to the celery leaves. All other post plant treatments appeared to be non-phytotoxic to the celery. Post treatments were applied 5 weeks after planting. Oxyfluorfen at all rates and formulations caused some degree of leaf burning (0.13 lb WP-15% burning, 0.25 lb WP-25% burning, 0.25 lb EC-55% leaf burning). Celery treated with oxyfluorfen 0.25 lb EC also had burnt lesions on the leaf petioles. CDAA applied post caused leaf burning around the leaf edges only (approx. 5% injury). Linuron and prometryn caused no apparent phyto when applied Post.

Prometryn did not provide the grass control as in past trials. At the time of rating, grass plants were very small. Linuron post was similar to prometryn but had a heavier common purslane population. Oxyfluorfen post could not control the grass population. Burndown of common purslane was excellent, however the residual was short. CDAA was exceptionally clean. Those weeds present were very small and could easily be controlled by cultivation.

Two applications of linuron and oxyfluorfen at 0.25 lb WP or EC reduced yields when compared to the handweeded check. Alachlor, propachlor and linuron at 4 lb ai/A post plant also reduced yields. Treatments 16 and 17 do not have yields reported. They are actually treatments #3 and 7 that had weed counts taken before the post treatments were applied.

The average plant weight has been adjusted for the variation in the stand which ranged from 25-30 plants per 15 ft. row.

| | TREATMENT | | NO. WEEDS PER 1 FT.$^2$ | | | | | | YIELD | |
|---|---|---|---|---|---|---|---|---|---|---|
| Herbicide | Method | Lb ai/A | Fall Panicum | Large Crabgrass | Total Grass | Red Root Pigweed | Common Purslane | Total BRDL | Total Wt/15 ft. of row | Average Wt. Per Plant |
| 1 Unweeded Check | ---- | ---- | 2.5 | 11.8 | 15.0 | 1.7 | 13.5 | 16.0 | 21.4 | 0.9 |
| 2 Handweeded Check | ---- | ---- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 78.3 | 3.0 |
| 3 Linuron + | Post Plant | 2.00 | 1.0 | 8.2 | 9.2 | 0.0 | 4.2 | 4.2 | 73.5 | 2.8 |
| Prometryn | Post | 1.00 | | | | | | | | |
| 4 Linuron + | Post Plant | 2.00 | 0.5 | 18.8 | 19.3 | 0.0 | 6.0 | 6.2 | 69.7 | 2.7 |
| Oxyfluorfen WP | Post | 0.13 | | | | | | | | |
| 5 Linuron + | Post Plant | 2.00 | 0.3 | 14.3 | 14.7 | 0.0 | 6.5 | 6.7 | 61.7 | 2.3 |
| Oxyfluorfen WP | Post | 0.25 | | | | | | | | |
| 6 Linuron + | Post Plant | 4.00 | 0.0 | 8.8 | 8.8 | 0.0 | 6.8 | 7.0 | 61.2 | 2.3 |
| Oxufluorfen EC | Post | 0.25 | | | | | | | | |
| 7 CDAA + | Post Plant | 4.00 | 0.0 | 2.0 | 2.0 | 0.2 | 4.8 | 5.3 | 77.1 | 2.8 |
| CDAA | Post | 4.00 | | | | | | | | |
| 8 Linuron + | Post Plant | 2.00 | 0.5 | 8.8 | 9.3 | 0.0 | 10.7 | 10.8 | 62.2 | 2.4 |
| Linuron | Post | 2.00 | | | | | | | | |
| 9 Chlorpropham | Post Plant | 2.00 | 1.5 | 9.5 | 11.0 | 0.0 | 5.2 | 5.2 | 78.7 | 2.9 |
| 10 Alachlor | Post Plant | 2.00 | 0.0 | 3.0 | 3.0 | 0.2 | 4.8 | 6.3 | 54.0 | 2.1 |
| 11 Alachlor | Post Plant | 4.00 | 0.0 | 0.7 | 0.7 | 0.0 | 0.2 | 1.7 | 65.0 | 2.5 |
| 12 Propachlor | Post Plant | 2.00 | 0.0 | 4.8 | 4.8 | 0.7 | 7.8 | 10.8 | 61.3 | 2.4 |
| 13 Propachlor | Post Plant | 4.00 | 0.0 | 1.2 | 1.2 | 0.3 | 2.2 | 3.3 | 61.0 | 2.3 |
| 14 Linuron | Post Plant | 4.00 | 0.0 | 5.5 | 5.5 | 0.0 | 1.8 | 2.0 | 57.2 | 2.2 |
| 15 CDAA | Post Plant | 4.00 | 0.0 | 0.2 | 0.2 | 0.0 | 1.0 | 2.2 | 67.5 | 2.5 |
| 16 Linuron | Post Plant | 2.00 | 1.3 | 10.3 | 11.7 | 0.0 | 8.0 | 8.0 | ---- | --- |
| 17 CDAA | Post Plant | 4.00 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.5 | ---- | --- |
| LSD 5% | | | 1.3 | 4.8 | 5.4 | 0.6 | 5.2 | 5.1 | 15.4 | 0.6 |

# EGGPLANT WEED CONTROL UNDER CLEAR PLASTIC

Location: Lane Avenue Farm
Cultivar: Classic
Treated: June 8
Planted: June 8
Ratings: July 13 Scale: 1 = no weed control, crop killed
August 26 10 = 100% weed control, no crop injury
Harvested: Multiple Harvests
Soil Type: Brookston Silty Clay Loam, 2% O.M.
Plot Size: 1 row 25' long, rows 5' apart
Plot Design: Randomized complete block with 3 reps

Summary: Weed ratings were taken twice during the summer to evaluate the length of control. Several herbicides that normally are incorporated were compared rate/rate, PPI vs. Pre. Pendimethalin, DCPA and trifluralin all had higher weed ratings (many not significant) when left on the soil surface. Oryzalin gave better weed control when incorporated. The solubility of oryzalin is low which undoubtedly accounts for the better control when it is incorporated. This trend was still apparent late in the season (August 26 rating). Propachlor, alachlor and metolachlor were all evaluated for length of control. Propachlor had the lowest initial weed rating and the control rapidly dropped off. By late August alachlor and metolachlor were breaking down. Although not significant metolachlor was more effective at this date. Oryzalin pre at 1.5 lbs. gave better control which lasted longer into the season than 1 lb. and was equal to 2 lbs. Napropamide provided very good weed control 35 days into the season which lasted throughout the season. The major weed species under the plastic mulch was common purslane and fall panicum.

Yields were quite variable due to the large amount of rain received early in the season. The plastic mulch prevented the soil from drying out until late in the season. Plant growth was not normal and quite variable throughout the field. Generally, we felt that oryzalin may have been slightly phytotoxic to the eggplant. This could be due to the eggplant having been already under a water stress. When comparing propachlor, alachlor and metolachlor in other vegetables a trend of reducing yields exists as we go from propachlor → alachlor → metolachlor. Although not significant a trend of this type exists here.

| TREATMENT | | | WEED RATING[1] | | YIELD PER 25' ROW | |
|---|---|---|---|---|---|---|
| Herbicide | Method | lbs/A | July 13 | August 26 | Fruit No. | Fruit Wt. (lbs.) |
| Clear Plastic | --- | --- | 5.0 | 3.3 | 17.6 | 14.3 |
| Black Plastic | --- | --- | 10.0 | 10.0 | 41.1 | 35.2 |
| DCPA | Pre | 10.50 | 10.0 | 7.7 | 42.2 | 38.5 |
| DCPA | PPI | 10.50 | 6.7 | 5.0 | 65.7 | 52.4 |
| Pendimethalin | Pre | 1.00 | 9.7 | 9.0 | 47.4 | 45.3 |
| Pendimethalin | PPI | 1.00 | 9.3 | 7.7 | 51.1 | 46.9 |
| Propachlor | Pre | 2.00 | 8.0 | 5.3 | 58.0 | 53.7 |
| Alachlor | Pre | 2.00 | 10.0 | 7.3 | 56.7 | 51.5 |
| Metolachlor | Pre | 2.00 | 10.0 | 9.0 | 46.4 | 41.3 |
| Napropamide | Pre | 2.00 | 9.3 | 8.0 | 66.6 | 61.5 |
| Trifluralin | Pre | 1.00 | 10.0 | 8.7 | 82.5 | 75.4 |
| Trifluralin | PPI | 1.00 | 8.3 | 7.0 | 49.4 | 46.0 |
| Oryzalin | PPI | 1.00 | 9.7 | 8.3 | 41.5 | 40.3 |
| Oryzalin | Pre | 1.00 | 9.0 | 6.7 | 37.3 | 33.7 |
| Oryzalin | Pre | 1.50 | 10.0 | 8.3 | 36.8 | 33.6 |
| Oryzalin | Pre | 2.00 | 9.0 | 8.3 | 54.0 | 49.5 |
| LSD 5% | | | 2.18 | 2.78 | NSD | NSD |

Scale: 1 = No weed control, crop kill
10 = 100% weed control, no crop injury

# POST EMERGENT GRASS STUDY

Location: Lane Avenue Farm
Planted: June 19
Treated: June 17
Ratings: July 29 Scale: 1 = no weed control, crop killed
August 6 10 = 100% weed control, no crop injury
Plot Size: 1 bed 5' wide, 20' long
Plot Design: Randomized complete block with 3 reps

Summary: Cucumbers, snap beans, potatoes, seeded tomatoes, cabbage, carrots and onions were treated 1 month after seeding with various post grass herbicides. One bed area was seeded to various grassy weed species including giant foxtail, green foxtail, crabgrass, barnyard grass and fall panicum. Grassy weeds were 4-8" tall at the time of application. Twelve days after treatment the grass was either dead or dying. Injury to some crop plants was evident. Ratings were made on this date (July 29) and 9 days later. The later rating showed similar or more control from all herbicides except fluazifop-butyl. Green foxtail (~6" tall) was resprouting from plants that the leaves were killed on. This compound apparently did not kill this grass but simply burnt the leaves off. Other species were better controlled but had some regrowth. Diclofop was of no value on weeds of this size. Other materials gave varying results. DPX-5184 was the only herbicide to cause any crop injury. Cucumber leaves were severely burnt and killed. Cabbage and snap beans were injured but not as severely as cucumbers.

| | | Phytotoxicity Ratings | | | | |
|---|---|---|---|---|---|---|
| | | | | Potato-Tomato | | |
| Herbicide[1/] | ai/A | Grass Spp. | Cucumber | Carrot-Onion | Cabbage | Snap Bean |
| Diclofop | 1.00 | 1.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Sethoxydim | 0.25 | 8.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Sethoxydim | 0.50 | 9.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| CGA 82725 | 0.25 | 7.7 | 10.0 | 10.0 | 10.0 | 10.0 |
| CGA 82725 | 0.50 | 8.7 | 10.0 | 10.0 | 10.0 | 10.0 |
| Fluazifop-butyl | 0.20 | 1.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Fluazifop-butyl | 0.30 | 1.7 | 10.0 | 10.0 | 10.0 | 10.0 |
| Fluazifop-butyl | 0.40 | 3.3 | 10.0 | 10.0 | 10.0 | 10.0 |
| DPX 5184 | 0.25 | 10.0 | 2.3 | 10.0 | 4.3 | 9.5 |
| DPX 5184 | 0.50 | 10.0 | 2.7 | 10.0 | 9.7 | 9.5 |
| LSD 5% | | 1.8 | 0.4 | NSD | 0.4 | NSD |

[1/] One quart/A Atplus 411F was added to Sethoxydim and DPX-5184. Fluazifop-butyl received X-77 at 0.1%.

# LETTUCE WEED CONTROL

Location: Muck Crops Branch
Cultivar: Boston Bibb
Seeded: May 4
Treated: Pre - May 5
Weed Count: June 3
Harvested: Plot flooded - no harvest data
Soil Type: Carlisle Muck, 75% O.M., pH 5.3
Plot Size: 3 rows 16" apart on 60" bed 18' long
Plot Design: Randomized Complete Block with 3 reps

Summary: This plot was completely flooded and the crop lost during late June. Chlorpropham was the only treatment that was not phytotoxic to the lettuce. CDAA and propachlor killed the lettuce soon after it germinated.

| TREATMENT | | | NO. WEEDS PER 1 FT.2 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Herbicide | Method | Lb ai/A | Large Crabgrass | Love Grass | Total Grass | Ladys Thumb | Red Root Pigweed | Common Purslane | Galinsoga | Total BRDL |
| Unweeded Check | --- | --- | 6.7 | 2.5 | 10.3 | 22.8 | 3.0 | 41.2 | 2.5 | 68.9 |
| Handweeded Check | --- | --- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Chlorpropham | Pre | 4.0 | 5.3 | 0.5 | 6.8 | 1.5 | 3.3 | 30.2 | 3.7 | 39.2 |
| CDAA | Pre | 3.6 | 0.7 | 0.0 | 0.7 | 1.2 | 0.3 | 8.5 | 0.0 | 10.0 |
| Propachlor | Pre | 2.0 | 0.5 | 0.0 | 0.7 | 7.7 | 0.2 | 21.0 | 0.2 | 29.0 |
| Propachlor | Pre | 4.0 | 0.2 | 0.0 | 0.2 | 0.2 | 0.3 | 15.2 | 0.0 | 15.8 |
| Chlorpropham + Propachlor | Pre | 2.0 2.0 | 1.0 | 0.0 | 1.0 | 0.5 | 0.5 | 19.5 | 0.2 | 20.7 |
| LSD 5% | | | 3.7 | NSD | 5.5 | NSD | NSD | 13.1 | 2.1 | 14.7 |

# Lettuce Residue

Location: Muck Crops Branch
Cultivar: Boston Bibb
Planted: August 4
Treated: May 4, trt #3-8, (2nd herbicide) June 3
Harvested: October 13
Soil Type: Carlisle Muck, 75% O.M., pH 5.5
Plot Size: 1 row 25' long
Plot Design: Randomized complete block with 3 reps

Summary: Lettuce was planted in a recently harvested celery field (see celery weed control). Lettuce growth was then observed as an indicator of the amount of herbicide that remained in the soil. Some herbicides such as prometryn are quite phytotoxic to lettuce while others CIPC are quite safe.

The lettuce was harvested early due to an expected frost which resulted in smaller plants than were desired. However, from the results there were no yield reductions. None of the treatments caused visible phytotoxicity symptoms on the lettuce.

| TREATMENT | | YIELD | | |
|---|---|---|---|---|
| Herbicide | Lb ai/A | No. Plants | Total Plant Wt. (lbs) | Average Plant Wt. (lbs.) |
| 1. Unweeded Check | --- | 22.7 | 2.2 | 0.1 |
| 2. Handweeded Check | --- | 18.0 | 3.9 | 0.2 |
| 3. Linuron + | 2.00 | 25.3 | 5.0 | 0.2 |
| Prometryn | 1.00 | | | |
| 4. Linuron + | 2.00 | 16.0 | 2.7 | 0.2 |
| Oxyfluorfen WP | 0.13 | | | |
| 5. Linuron + | 2.00 | 13.7 | 1.8 | 0.1 |
| Oxyfluorfen WP | 0.25 | | | |
| 6. Linuron + | 2.00 | 19.7 | 3.0 | 0.2 |
| Oxyfluorfen EC | 0.25 | | | |
| 7. CDAA + | 4.00 | 26.3 | 3.5 | 0.1 |
| CDAA | 4.00 | | | |
| 8. Linuron + | 2.00 | 22.7 | 3.3 | 0.1 |
| Linuron | 2.00 | | | |
| 9. CIPC | 2.00 | 22.3 | 3.7 | 0.2 |
| 10. Alachlor | 2.00 | 12.7 | 1.3 | 0.1 |
| 11. Alachlor | 4.00 | 10.3 | 1.0 | 0.1 |
| 12. Propachlor | 2.00 | 22.3 | 2.0 | 0.1 |
| 13. Propachlor | 4.00 | 16.0 | 1.1 | 0.1 |
| 14. Linuron | 4.00 | 18.3 | 1.3 | 0.1 |
| 15. CDAA | 4.00 | 15.3 | 1.3 | 0.1 |
| LSD 5% | | NSD | NSD | NSD |

# Muskmelon Weed Control Under Clear Plastic

Location: Lane Avenue Farm
Cultivar: Gold Star
Treated: June 8
Mulched: June 8
Transplanted: June 8
Ratings: July 13
Harvested: Multiple
Soil Type: Brookston Silty Clay Loam, 2% O.M.
Plot Size: 1 row 25' long, rows 5 ' apart
Plot Design: Randomized Complete Block with 3 Reps

Summary: The plots were covered with a 1.5 mil. x 4' wide clear plastic mulch immediately after the herbicides were applied. Muskmelons were transplanted into the field the same day. The major weeds in the field were barnyard grass, fall panicum, common purslane and some galinsoga. All of the herbicide treatments provided acceptable weed control except for a few weeds that were growing in the planting hole. Clear plastic, without the use of a herbicide, was totally unacceptable. Bensulide and naptalam was an acceptable treatment when incorporated or left on the soil surface.

All treatments provided acceptable yields. There was no apparent earliness of the crop when comparing black to clear plastic.

| TREATMENT | | | RATINGS[1] | | YIELDS | |
|---|---|---|---|---|---|---|
| Herbicide | Method | Lbs. ai/A | Weed | Crop Phyto | Fruit No. | Fruit Wt. (lbs.) |
| Clear Plastic | --- | --- | 1.7 | 7.0 | 20.0 | 63.8 |
| Black Plastic | --- | --- | 10.0 | 8.7 | 19.3 | 61.6 |
| Ethalfluralin | Pre | 1.25 | 10.0 | 7.7 | 25.0 | 82.6 |
| Ethalfluralin | Pre | 1.75 | 10.0 | 7.7 | 28.0 | 96.8 |
| DCPA | PPI | 10.50 | 6.7 | 7.7 | 25.7 | 81.4 |
| Bensulide + | PPI | 4.00 | 8.0 | 6.7 | 23.0 | 81.0 |
| Naptalam | PPI | 2.00 | | | | |
| Chloramben | Pre | 2.00 | 8.0 | 8.0 | 28.0 | 95.4 |
| Metolachlor | Pre | 2.00 | 10.0 | 4.7 | 20.3 | 65.3 |
| Pendimethalin | Pre | 1.00 | 10.0 | 6.7 | 22.7 | 75.6 |
| Penimethalin | Pre | 1.50 | 10.0 | 9.0 | 27.0 | 89.9 |
| Bensulide + | Pre | 4.00 | 9.0 | 8.0 | 26.0 | 88.5 |
| Naptalam | Pre | 2.00 | | | | |
| Bensulide + | Pre | 4.00 | 10.0 | 8.0 | 25.0 | 80.2 |
| Dinoseb | Pre | 3.00 | | | | |
| LSD 5% | | | 1.7 | NSD | NSD | NSD |

[1] 1 = no weed control, complete crop kill
10 = 100% weed control, no crop injury

Location: Muck Crops Branch
Cultivar: Spartam Banner
Seeded: May 4
Treated: May 5 pre-treatments
May 15 cracking stage - trt #14, 15 & 16
June 17 post 3 leaf
July 1 trt. 11 & 12
July 29 trt. 9 & 10
Weed Count: June 3 - pre-treatments only
July 1 post-treatments
Harvested: September 24
Soil Type: Carlisle Muck 75% O.M., pH 5.5
Plot Size: 3 rows, 16" apart on 60" bed, 18' long
Plot Design: Randomized complete block with 3 reps

Summary. Propachlor applied at seeding was very effective in controlling weeds for the first weeks of the season. Weeds were very small at the end of this time and easily controlled by post-emergence treatments. Propachlor (pre) followed by CDAA and chlorpropham at the onion cracking stage was cleaner than propachlor plus other post-treatments or the use of CDAA plus chlorpropham alone. PPG 844 pre-emergence gave poor weed control. Post-emergence treatments with PPG 844 resulted in approximately 20% of the onion leaves being burnt. Weeds were also burnt, however not severely enough to cause death. Post-emergent treatments with the emulsifiable concentrate (EC) and wettable powder (WP) formulations of oxyfluorfen had varying results. The WP formulation was safe to the onions. At the higher rate (0.5 lb.) the onion leaves had an occasional necrotic area. The EC formulation was more phytotoxic than the WP. The 0.25 lb. rate caused approximately 15% foliar necrosis to the onions. Injury was reduced to approx. 5% with the 0.13 lb. rate EC. Injury to the weeds was more severe with the EC formulation. A post-emergent application with chloroxuron was not effective in controlling emerged weeds. Weed foliage was burnt but not killed. Poast proved to be a very effective post-emergent grass controlling herbicide. There was no apparent phytotoxicity to the onions from this treatment.

The only significant yield reductions were when sethoxydim or PPG 844 were applied post-emergent to the onions. Trt #21 is actually trt #5 before Post trt.

| | TREATMENT | | | NUMBER OF WEEDS/1 FT.$^2$ | | | | | YIELD/15 FT. OF ROW | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Herbicide | Method | Lb. a.i./A | Large Crabgrass | Total Grass | Ladys-thumb | Common Purslane | Galinsoga | Total BRDL | Total Bulb No. | Total Bulb Wt. (lbs.) |
| 1. | Unweeded Check | --- | --- | 7.8 | 9.7 | 4.5 | 32.2 | 2.5 | 43.5 | 0.0 | 0.0 |
| 2. | Handweeded Check | --- | --- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 202.0 | 27.8 |
| 3. | Propachlor + | Pre | 4.00 | 0.5 | 0.5 | 1.3 | 12.3 | 0.0 | 14.7 | 128.3 | 20.7 |
| | Diclofop | Post | 1.00 | | | | | | | | |
| 4. | Propachlor + | Pre | 4.00 | 2.5 | 2.7 | 1.2 | 6.8 | 0.0 | 8.8 | 177.3 | 27.5 |
| | Oxyfluorfen WP | Post 3 leaf | 0.13 | | | | | | | | |
| 5. | Propachlor + | Pre | 4.00 | 1.8 | 2.2 | 1.3 | 4.7 | 0.0 | 7.0 | 132.5 | 21.8 |
| | Oxyfluorfen WP | Post 3 leaf | 0.25 | | | | | | | | |
| 6. | Propachlor + | Pre | 4.00 | 1.5 | 1.7 | 2.3 | 6.0 | 0.2 | 9.2 | 152.7 | 25.3 |
| | Oxyfluorfen WP | Post 3 leaf | 0.50 | | | | | | | | |
| 7. | Propachlor + | Pre | 4.00 | 1.5 | 2.7 | 1.2 | 2.5 | 0.0 | 4.0 | 152.0 | 25.2 |
| | Oxyfluorfen EC | Post 3 leaf | 0.13 | | | | | | | | |
| 8. | Propachlor + | Pre | 4.00 | 1.3 | 1.7 | 1.2 | 2.8 | 0.0 | 4.3 | 182.7 | 29.0 |
| | Oxyfluorfen EC | Post 3 leaf | 0.25 | | | | | | | | |
| 9. | Propachlor + | Pre | 4.00 | herbicide residue data only | | | | | | 196.3 | 30.1 |
| | Oxyfluorfen WP | Post | 0.50 | | | | | | | | |
| 10. | Propachlor + | Pre | 4.00 | | | | | | | 167.3 | 28.7 |
| | Oxyfluorfen WP | Post | 1.00 | | | | | | | | |
| 11. | Propachlor + | Pre | 4.00 | | | | | | | 199.7 | 31.9 |
| | Oxyfluorfen WP | Post | 0.50 | | | | | | | | |
| 12. | Propachlor + | Pre | 4.00 | | | | | | | 195.0 | 33.3 |
| | Oxyfluorfen WP | Post | 1.00 | | | | | | | | |
| 13. | Propachlor + | Pre | 4.00 | 1.3 | 1.3 | 2.2 | 6.8 | 0.0 | 9.0 | 144.0 | 22.6 |
| | Chloroxuron | Post 3 leaf | 2.00 | | | | | | | | |
| 14. | CDAA + | Cracking Stage | 3.00 | 1.7 | 2.8 | 0.3 | 10.5 | 0.0 | 11.8 | 171.3 | 29.4 |
| | Chlorpropham + | Cracking Stage | 3.00 | | | | | | | | |
| | Chloroxuron | Post 3 leaf | 2.00 | | | | | | | | |
| 15. | CDAA + | Cracking Stage | 3.00 | 0.0 | 0.0 | 0.0 | 1.2 | 0.3 | 1.8 | 169.3 | 32.5 |
| | Chlorpropham | Cracking Stage | 3.00 | | | | | | | | |
| 16. | Propachlor + | Pre | 4.00 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.3 | 130.5 | 28.5 |
| | CDAA + | Cracking Stage | 3.00 | | | | | | | | |
| | Chlorpropham | Cracking Stage | 3.00 | | | | | | | | |
| 17. | PPG 844 | Pre | 0.50 | 6.8 | 7.5 | 3.3 | 10.5 | 0.2 | 14.5 | 184.0 | 23.7 |
| 18. | PPG 844 | Pre | 1.00 | 10.7 | 11.5 | 4.5 | 7.5 | 1.5 | 14.0 | 149.0 | 26.8 |
| 19. | Propachlor + | Pre | 4.00 | 0.5 | 1.7 | 3.7 | 0.5 | 0.0 | 5.2 | 106.0 | 13.8 |
| | PPG 844 + | Post 3 leaf | 0.40 | | | | | | | | |
| | Diclofop | Post 3 leaf | 1.00 | | | | | | | | |
| 20. | Propachlor + | Pre | 4.00 | 0.0 | 0.0 | 6.7 | 5.7 | 0.0 | 15.2 | 72.7 | 15.3 |
| | Sethoxydim | Post 3 leaf | 1.00 | | | | | | | | |
| 21. | Propachlor | Pre | 4.00 | 2.0 | 2.0 | 0.3 | 11.7 | 0.5 | 13.7 | | |
| | LSD 5% | | | 5.8 | 4.08 | NSD | 7.2 | 1.0 | 8.5 | 48.6 | 8.0 |

# PICKLE WEED CONTROL

Location: Lane Avenue Farm
Cultivar: Premier
Planted: June 18
Treated: June 18
Weed Counts: August 3
Harvested: Multiple Harvests
Soil Type: Brookston Silty Clay Loam, 2% O.M.
Plot Size: 1 row 25' long, rows 3' apart
Plot Design: Randomized Complete Block with 3 reps

Summary: Weed control was not a problem in any of the plots. Weed pressure was not severe with the unweeded check having approximately 9 weeds per 1 $ft^2$.

DCPA continues to look good this year. Differences were not observed in growth or yields with either the salt or methyl ester formulation of chloramben. Ethalfluralin was an effective treatment at 1.3 and 1.5 lbs. ai/A. The 3.0 lb. rate caused a significant stand reduction and loss of yield. Ethalfluralin in combination with chloramben was not acceptable. Results were erratic and hard to interpret. Bensulide plus naptalam yields were not as high as expected. Although they are statistically similar to the handweeded check, they are less than the highest yielding treatment. Metolachlor, alachlor and pendimethalin all proved to be unacceptable treatments.

| TREATMENT | | | NO. WEEDS PER 1 FT.$^2$ | | | YIELD | | |
|---|---|---|---|---|---|---|---|---|
| Herbicide | Method | Lb ai/A | Large Crabgrass | Common Purslane | Galinsoga | Number of Plants | Total No. Fruit | Total Fruit Wt. (lbs.) |
| Unweeded Check | --- | --- | 2.8 | 5.0 | 1.0 | 24.7 | 54.7 | 8.7 |
| Handweeded Check | --- | --- | 0.0 | 0.0 | 0.0 | 27.7 | 97.3 | 14.8 |
| Chloramben[1] | Pre | 2.00 | 0.0 | 0.0 | 0.2 | 27.3 | 95.7 | 15.1 |
| Chloramben[1] | Pre | 1.00 | 0.0 | 0.0 | 0.0 | 34.0 | 115.0 | 18.0 |
| Chloramben[1] + | Pre | 1.00 | 0.2 | 0.0 | 0.3 | 21.0 | 94.3 | 15.4 |
| Naptalam | Pre | 2.00 | | | | | | |
| DCPA | PPI | 7.50 | 0.3 | 1.2 | 0.7 | 26.7 | 115.3 | 24.7 |
| DCPA | PPI | 10.50 | 0.3 | 0.8 | 0.7 | 35.3 | 129.3 | 23.9 |
| Ethalfluralin | Pre | 1.30 | 0.0 | 0.0 | 0.5 | 30.3 | 143.0 | 22.8 |
| Ethalfluralin | Pre | 1.50 | 0.0 | 0.0 | 0.7 | 22.0 | 106.0 | 21.2 |
| Ethalfluralin | Pre | 3.00 | 0.0 | 0.0 | 0.0 | 7.7 | 38.7 | 5.7 |
| Ethalfluralin + | Pre | 1.30 | 0.0 | 0.0 | 0.3 | 17.7 | 81.7 | 11.7 |
| Chloramben[1] | Pre | 2.00 | | | | | | |
| Ethalfluralin + | Pre | 1.50 | 0.0 | 0.0 | 0.0 | 11.0 | 25.7 | 3.3 |
| Chloramben[1] | Pre | 1.00 | | | | | | |
| Bensulide + | PPI | 4.00 | 0.0 | 2.3 | 0.5 | 15.3 | 58.3 | 12.1 |
| Naptalam | PPI | 2.00 | | | | | | |
| Naptalam + | Pre | 2.00 | 0.0 | 5.2 | 0.0 | 34.0 | 118.3 | 20.5 |
| Diclofop | Pre | 1.00 | | | | | | |
| Naptalam + | Pre | 2.00 | 0.2 | 2.5 | 0.0 | 24.0 | 93.0 | 20.5 |
| Diclofop | Post | 1.00 | | | | | | |
| Metolachlor | Pre | 2.00 | 0.0 | 0.0 | 0.0 | 9.3 | 42.0 | 4.8 |
| Alachlor | Pre | 2.00 | 0.0 | 0.0 | 0.0 | 4.7 | 19.0 | 2.6 |
| Pendimethalin | Pre | 1.00 | 0.2 | 3.2 | 0.0 | 11.0 | 59.3 | 8.3 |
| Chloramben[2] | Pre | 2.00 | 0.0 | 0.0 | 0.2 | 18.3 | 101.7 | 13.0 |
| LSD 5% | | | 0.8 | 3.0 | 0.6 | 10.7 | 54.3 | 10.9 |

[1]Salt

[2]Methyl ester

# DACTHAL INCORPORATION STUDY WITH PICKLES

Location: Lane Avenue Farm
Cultivar: Premier
Planted: June 18
Treated: June 18
Weed Counts: July 30
Harvested: Multiple Harvests
Soil Type: Brookston Silty Clay Loam, 2% O.M.
Plot Size: 1 row 25' long, rows 3' apart
Plot Design: Randomized complete block with 3 reps

Summary: Due to the poor weather conditions during the spring months plant stand was not uniform. This led to more variability in the experiment than there normally would have been. When all treatments are analyzed together there is no statistical differences between them. Visual observations were that a single discing did not prepare a seed bed that was suitable for seeding cucumbers. A double discing was better but still may not be acceptable. The rolling cultivator was about equal to the double discing. The power rototiller produced a very fine flat seedbed that was optimum for seeding. When treatments for all 4 types of incorporation were evaluated the power rototiller had significantly higher yields.

When an analysis was run for the 4 herbicide treatments the weedy check had significantly lower yields.

| Method of Incorporation | Total No. Fruit | Total Fruit Wt. (lbs.) |
|---|---|---|
| Power Rototiller | 110.3 | 18.0 |
| Disc Once | 63.8 | 10.8 |
| Disc Twice (cross) | 71.8 | 12.1 |
| Rolling Cultivator | 85.8 | 12.6 |
| LSD 5% | 24.3 | 4.24 |

| Herbicide | Total No. Fruit | Total Fruit Wt. (lbs.) |
|---|---|---|
| Handweeded Check | 91.5 | 15.8 |
| Weedy Check | 61.3 | 8.5 |
| DCPA 7.5 lbs. | 87.1 | 13.9 |
| DCPA 10.5 lbs. | 91.8 | 15.2 |
| LSD 5% | 24.3 | 4.24 |

| TREATMENT | | | YIELD PER 25 FT. ROW | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Herbicide | Incorporation Method | Lb ai/A | Large Crab-grass | Barn-yard Grass | Fall Pani-cum | Total Grass | Common Purslane | Galin-soga | Redroot Pigweed | Total BRDL | Total No. Fruit | Total Fruit Wt. (lbs.) |
| Handweeded Check | Power Rototiller | --- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 116.7 | 19.9 |
| Handweeded Check | Disc Once | --- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 78.0 | 13.8 |
| Handweeded Check | Disc Twice (cross) | --- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 66.3 | 13.9 |
| Handweeded Check | Rolling Cultivator | --- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 105.0 | 15.6 |
| Weedy Check | Power Rototiller | --- | 11.5 | 0.0 | 4.2 | 16.2 | 8.8 | 1.8 | 1.8 | 12.8 | 76.7 | 11.5 |
| Weedy Check | Disc Once | --- | 5.2 | 1.0 | 16.7 | 23.5 | 10.3 | 6.3 | 1.3 | 18.8 | 48.0 | 8.0 |
| Weedy Check | Disc Twice (cross) | --- | 3.5 | 2.3 | 8.5 | 15.8 | 6.5 | 2.2 | 0.3 | 9.2 | 58.0 | 8.0 |
| Weedy Check | Rolling Cultivator | --- | 5.5 | 0.8 | 8.3 | 19.2 | 6.7 | 0.8 | 0.5 | 8.3 | 62.7 | 6.3 |
| DCPA | Power Rototiller | 7.50 | 7.0 | 0.7 | 1.3 | 9.5 | 4.3 | 3.3 | 0.7 | 8.3 | 114.0 | 18.6 |
| DCPA | Disc Once | 7.50 | 3.0 | 1.3 | 1.5 | 6.7 | 4.5 | 3.0 | 0.8 | 8.5 | 57.3 | 9.7 |
| DCPA | Disc Twice (cross) | 7.50 | 2.3 | 1.0 | 2.7 | 6.0 | 2.7 | 3.5 | 3.0 | 9.7 | 81.7 | 13.3 |
| DCPA | Rolling Cultivator | 7.50 | 1.7 | 0.0 | 3.0 | 7.5 | 2.0 | 2.7 | 0.3 | 5.5 | 95.3 | 14.2 |
| DCPA | Power Rototiller | 10.50 | 1.8 | 0.0 | 4.2 | 6.2 | 3.3 | 0.5 | 0.7 | 4.5 | 134.0 | 21.9 |
| DCPA | Disc Once | 10.50 | 1.7 | 2.0 | 4.7 | 10.3 | 5.2 | 4.8 | 0.5 | 10.5 | 72.0 | 11.6 |
| DCPA | Disc Twice (cross) | 10.50 | 2.8 | 0.2 | 3.7 | 7.3 | 5.2 | 6.3 | 2.5 | 14.2 | 81.0 | 13.2 |
| DCPA | Rolling Cultivator | 10.50 | 0.7 | 1.3 | 4.8 | 8.2 | 1.5 | 1.8 | 0.2 | 3.5 | 80.3 | 14.1 |
| LSD 5% | | | NSD | NSD | NSD | NSD | NSD | NSD | NSD | 6.26 | NSD | NSD |

# Potato Weed Control

Location: Lane Avenue Farm
Cultivar: Kathadin
Planted: May 22
Treated: PPI trts May 22
Pre trts June 1
Delayed pre trts June 11
Layby trts August 4
Weed Counts: June 30 and July 8
Harvested: October 5
Soil Type: Brookston Silty Clay loam, 2% O.M.
Plot Size: 1 row 25' long, 1 guard row between each trt row, 3' apart
Plot Design: Randomized Complete Block with 3 Reps

Summary: There were no visible phytotoxicity symptoms to the potatoes from any of the treatments. Plant stand was somewhat spotty due to the wet spring. There was a considerable amount of rotting of the potato seed pieces. Due to the topography of the field this injury was not uniform across the field. Due to the spotty plant stand and loss of vigor due to seed piece rotting yields are hard to interpret.

Layby applications of alachlor, metolachlor, napropamide and EPTC were effective at reducing late season grass problems.

| TREATMENT | | | WEEDS PER 1 FT.$^2$ | | | YIELDS |
|---|---|---|---|---|---|---|
| Herbicide | Method | Lb ai/A | Total Grass | Common Purslane | Total BRDL | Tuber Wt. (lbs.) |
| Unweeded Check | --- | --- | 4.3 | 9.5 | 12.7 | 3.5 |
| Handweeded Check | --- | --- | 0.0 | 0.0 | 0.0 | 3.3 |
| Pendimethalin 50 DF + | Pre | 1.00 | 0.0 | 0.0 | 0.0 | 18.3 |
| Metribuzin | Pre | .38 | | | | |
| Pendimethalin 4F + | Pre | 1.00 | 0.0 | 0.0 | 0.0 | 6.1 |
| Metribuzin | Pre | .38 | | | | |
| Alachlor + | Delayed Pre | 2.00 | 0.2 | 0.0 | 0.0 | 8.2 |
| Linuron | Delayed Pre | 1.00 | | | | |
| Pendimethalin 50 DF + | Pre | 1.00 | 0.0 | 0.0 | 0.3 | 29.8 |
| Metribuzin | Pre | .75 | | | | |
| Pendimethalin 4F + | Pre | 1.00 | 0.0 | 0.0 | 0.0 | 14.7 |
| Metribuzin | Pre | .75 | | | | |
| Pendimethalin 4F + | PPI | 1.00 | 0.0 | 0.0 | 0.2 | 7.5 |
| EPTC | PPI | 4.00 | | | | |
| PPG 844 | Pre | .50 | 0.8 | 0.0 | 0.0 | 15.5 |
| PPG 844 | Pre | 1.00 | 0.2 | 0.0 | 0.0 | 10.8 |
| Linuron L + | Delayed Pre | 1.00 | 1.5 | 0.0 | 0.0 | 15.9 |
| Alachlor | Delayed Pre | 2.00 | | | | |
| Linuron L + | Delayed Pre | 1.00 | 0.5 | 0.0 | 0.2 | 17.3 |
| Metolachlor | Delayed Pre | 2.00 | | | | |
| Linuron L + | Delayed Pre | 1.00 | 0.0 | 0.2 | 0.2 | 23.8 |
| Pendimethalin | Delayed Pre | 1.00 | | | | |
| Metribuzin DF + | Delayed Pre | .50 | 0.2 | 0.0 | 0.0 | 12.1 |
| Alachlor | Delayed Pre | 2.00 | | | | |
| Metribuzin DF | Delayed Pre | .50 | 0.0 | 0.0 | 0.0 | 9.0 |
| Metolachlor | Delayed Pre | 2.00 | | | | |
| Metribuzin DF + | Delayed Pre | .50 | 0.0 | 0.0 | 0.2 | 9.4 |
| Pendimethalin | Delayed Pre | 1.00 | | | | |
| Metolachlor + | Delayed Pre | 2.00 | 0.5 | 0.0 | 0.2 | 13.5 |
| Dinoseb | Delayed Pre | 3.00 | | | | |
| Metolachlor + | Pre | 2.00 | 0.0 | 0.0 | 0.2 | 16.2 |
| Metolachlor 15G | Directed At Layby | 2.00 | | | | |
| Metolachlor + | Pre | 2.00 | 0.0 | 0.0 | 0.2 | 19.8 |
| Metolachlor | Directed At Layby | 2.00 | | | | |
| Metolachlor | Pre | 2.00 | 0.0 | 0.0 | 0.3 | 11.2 |
| Alachlor + | Pre | 2.00 | 0.0 | 0.0 | 0.0 | 16.0 |
| Metribuzin + | Pre | .50 | | | | |
| Alachlor | Directed At Layby | 2.00 | | | | |
| Alachlor + | Pre | 2.00 | 0.0 | 0.0 | 0.0 | 17.7 |
| Metribuzin + | Pre | .50 | | | | |
| Alachlor + | Directed At Layby | 2.00 | | | | |
| Metribuzine | Directed At Layby | .50 | | | | |
| Cyanazine | Pre | 1.50 | 0.0 | 0.0 | 0.0 | 24.3 |
| Cyanazine + | Pre | 1.50 | 0.0 | 0.0 | 0.0 | 25.7 |
| Alachlor | Pre | 2.00 | | | | |
| Alachlor + | Pre | 1.00 | 0.2 | 0.0 | 0.7 | 23.1 |
| Glyphosate | 2 mph 33% sol.(v/v) | | | | | |
| Alachlor + | Pre | 1.00 | 0.2 | 0.0 | 0.7 | 7.5 |
| Glyphosate | 4 mph 33% sol.(v/v) | | | | | |
| Alachlor + | Pre | 2.00 | 0.0 | 0.0 | 0.2 | 19.3 |
| Metribuzin 50W | Post | .38 | | | | |
| Alachlor + | Pre | 2.00 | 0.0 | 0.0 | 0.5 | 12.6 |
| Metribuzin 4L | Post | .38 | | | | |
| S-734 WP | PPI | .75 | 0.0 | 6.0 | 8.2 | 13.0 |
| S-734 WP | PPI | 1.00 | 0.0 | 7.0 | 7.8 | 13.5 |
| S-734 WP | PPI | 1.50 | 0.0 | 4.5 | 6.0 | 4.5 |
| Oryzalin | Pre | 1.00 | 0.5 | 0.2 | 0.2 | 15.8 |
| Oryzalin + | Pre | 1.00 | 0.0 | 0.0 | 0.0 | 21.7 |
| Metribuzin | Pre | .75 | | | | |
| Mon 097 | Pre | 2.00 | 3.7 | 1.5 | 4.0 | 17.2 |
| Alachlor + | Delayed Pre | 2.00 | 0.2 | 0.0 | 0.2 | 26.4 |
| Linuron + | Delayed Pre | 1.00 | | | | |
| Fluazifop | Directed At Layby | 0.50 | | | | |
| Alachlor + | Delayed Pre | 2.00 | 0.3 | 0.2 | 0.3 | 18.7 |
| Linuron + | Delayed Pre | 1.00 | | | | |
| CGA 82725 | Directed at Layby | 0.50 | | | | |
| EPTC + Extender | PPI | 4.00 | 0.0 | 1.2 | 2.7 | 16.9 |
| EPIC | PPI | 4.00 | 0.0 | 0.5 | 1.2 | 11.9 |
| EPTC + Extender + | PPI | 4.00 | 0.0 | 0.2 | 0.2 | 14.6 |
| Metribuzin | PPI | .25 | | | | |
| EPTC + | PPI | 4.00 | 0.0 | 0.0 | 0.0 | 12.1 |
| Metribuzin | PPI | .25 | | | | |
| Napropamide | PPI | 1.00 | 0.0 | 0.0 | 0.3 | 9.9 |
| EPTC | PPI | 4.00 | | | | |
| Napropamide | PPI | 1.00 | 0.3 | 0.2 | 0.7 | 18.0 |
| Napropamide + | PPI | 1.00 | 0.3 | 0.2 | 0.7 | 12.2 |
| EPTC | Directed At Layby | 4.00 | | | | |
| Napropamide + | PPI | 1.00 | 0.3 | 0.2 | 0.7 | 14.8 |
| EPTC + Extender | Directed At Layby | 4.00 | | | | |
| Napropamide + | PPI | 1.00 | 0.3 | 0.2 | 0.7 | 11.9 |
| Napropamide | Directed At Layby | 1.00 | | | | |
| Napropamide + | PPI | 1.00 | 0.2 | 0.7 | 1.0 | 11.9 |
| Metribuzin | PPI | .50 | | | | |
| LSD 5% | | | 1.6 | 1.9 | 2.8 | 13.4 |

# SPINACH WEED CONTROL

Location: Muck Crops Branch
Cultivar: Melody
Seeded: May 4
Treated: Pre - May 5
Weed Count: June 3
Harvest: Plot flooded - no harvest data
Soil Type: Carlisle Muck, 75% O.M., pH 5.3
Plot Size: 3 rows 16" apart on 60" bed 18' long
Plot Design: Randomized Complete Block with 3 reps

Summary: This plot was completely flooded and the crop lost during late June. Chlorpropham treated spinach had a good plant stand and was growing vigorously. CDAA severely stunted (approx. 50%) the spinach. Propachlor inhibited germination and stunted the spinach. The 2 lb rate caused a minimum of injury. Alachlor severely inhibited germination and the spinach was severely stunted.

| TREATMENT | | | NO. WEEDS PER 1 FT.$^2$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Herbicide | Method | Lb ai/A | Fall Panicum | Large Crabgrass | Total Grass | Ladys Thumb | Common Purslane | Red Root Pigweed | Common Lambsquarter | Total BRDL |
| Unweeded Check | --- | --- | 2.2 | 4.0 | 6.5 | 1.5 | 20.2 | 3.0 | 6.5 | 32.3 |
| Handweeded Check | --- | --- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Chlorpropham | Pre | 2.0 | 6.2 | 4.8 | 11.5 | 0.0 | 12.8 | 3.5 | 3.5 | 20.0 |
| CDAA | Pre | 3.0 | 0.0 | 0.0 | 0.0 | 1.8 | 2.3 | 0.7 | 3.0 | 7.7 |
| Propachlor | Pre | 2.0 | 0.0 | 0.7 | 0.8 | 1.0 | 5.8 | 0.5 | 2.5 | 9.8 |
| Propachlor | Pre | 4.0 | 0.3 | 1.0 | 1.3 | 0.3 | 1.3 | 0.2 | 4.2 | 6.0 |
| Alachlor | Pre | 2.0 | 0.0 | 0.5 | 0.5 | 0.2 | 0.2 | 0.0 | 2.2 | 2.5 |
| LSD 5% | | | 4.1 | 2.0 | 5.3 | 1.1 | 6.6 | 2.4 | NSD | 11.1 |

# EVALUATION OF NAPROPAMIDE ON STRAWBERRY DAUGHTER PLANT ROOTING

Location: Lane Avenue Farm
Cultivar: Red Chief
Planted: March 26
Treated: April 1
Evaluation: September 14
Soil Type: Brookston Silty Clay Loam, 2% O.M.
Plot Size: 1 row 25' long, rows 5' apart
Plot Design: Randomized complete block with 3 reps

Summary: Herbicides were applied over the top of the previously planted strawberreis and irrigated. Stand establishment was excellent with more than a 95% survival rate. There was no apparent phytotoxicity from any of the rates of napropamide. There was no inhibition of rooting of daughter plants from any of the treatments.

| TREATMENT | | | |
|---|---|---|---|
| Herbicide | Method | Lb ai/A | Daughter plant rooting[1] |
| DCPA 75W | Post | 12.00 | 10 |
| Napropamide 50W | Post | 1.00 | 10 |
| Napropamide 50W | Post | 2.00 | 10 |
| Napropamide 50W | Post | 3.00 | 10 |
| Napropamide 50W | Post | 4.00 | 10 |

[1]Scale: 1 = no daughter plant rooting
10 = daughter plants well rooted

# Direct Seeded Tomatoes Fremont

Location: Vegetable Crops Branch
Cultivar: Heinz 722
Seeded: May 7
Treatments: May 7
Weed Counts: June 17
Harvested: September 23
Soil Type: Sandy Loam, 3% O.M.
Plot Size: 1 row 30' long, rows 5' apart
Plot Design: Randomized Complete Block with 4 Reps

Summary: This plot received over 9 inches of rain in June and was flooded several times during the season. Weed counts reflect what can be expected in a wet year such as 1981. Any treatments which contained diphenomid, pebulate or napropamide had acceptable weed control. Grasses were the main weed problem and were adequately controlled when the weather conditions are considered.

Alachlor and pendimethalin significantly reduced plant stand when compared to other treatments. Due to the wet weather weeds did emerge and grow in the handweeded checks which may have reduced the tomato plant stand. There was no visible injury to the tomatoes from diphenamid, pebulate or chloramben.

Due to extremely wet weather at harvest time and flooding of the plot area only 1 rep was harvested. This plot was a little higher in elevation and a little dryer. Since only 1 rep was harvested a statistical analysis could not be carried out. However I feel that this rep is a good indicator of what might have been expected. Napropamide by itself or in combination with pebulate or diphenamide had good yields. Pebulate by itself also produced acceptable yields.

| TREATMENT | | | PLAND STAND | WEED COUNTS | | | | YIELDS(rep 1 only) |
|---|---|---|---|---|---|---|---|---|
| Herbicide | Method | Lbs. ai/A | Tomato Plants | Yellow Foxtail | Total Grass | Common Ragweed | Total BRDL | Fruit Wt. (lbs.) |
| Unweeded Check | --- | --- | 12.8 | 91.5 | 92.3 | 1.8 | 6.0 | 0.0 |
| Handweeded Check | --- | --- | 19.8 | 0.0 | 0.0 | 0.0 | 0.0 | 71.5 |
| Diphenamid + | Pre | 5.00 | 29.0 | 0.5 | 0.5 | 0.3 | 2.3 | 134.7 |
| Diclofop | Pre | 1.00 | | | | | | |
| Diphenamid | Pre | 5.00 | 32.3 | 1.3 | 1.3 | 0.0 | 1.8 | 166.0 |
| Alachlor | Pre | 2.00 | 10.0 | 0.0 | 0.0 | 0.0 | 1.5 | 90.3 |
| Napropamide | PPI | 2.00 | 36.0 | 18.3 | 18.3 | 0.3 | 5.8 | 204.3 |
| Chloramben | Pre | 2.00 | 31.0 | 26.3 | 27.0 | 0.8 | 5.3 | 181.6 |
| Pebulate | PPI | 5.00 | 21.0 | 9.5 | 9.5 | 1.0 | 3.8 | 224.4 |
| Napropamide + | PPI | 2.00 | 39.0 | 6.0 | 6.0 | 0.0 | 1.3 | 243.1 |
| Pebulate | PPI | 5.00 | | | | | | |
| Pendimethalin | Pre | 1.00 | 13.3 | 12.8 | 12.8 | 3.8 | 9.0 | 24.7 |
| Diphenamid + | PPI | 3.00 | 29.8 | 13.5 | 13.5 | 0.5 | 3.5 | 278.4 |
| Napropamide | PPI | 1.00 | | | | | | |
| Diphenamid + | PPI | 3.00 | 34.0 | 7.0 | 7.0 | 0.3 | 1.8 | 235.5 |
| Napropamide | PPI | 1.50 | | | | | | |
| LSD 5% | | | 10.1 | 19.3 | 19.4 | 1.7 | NSD | |

# NAPROPAMIDE POST PLANT ON TOMATOES

Location: Lane Avenue Farm
Cultivar: Campbells 37
Transplanted: June 8
Treated: June 11
Harvested: Sept. 10
Soil Type: Brookston Silty Clay Loam, 2% O.M.
Plot Size: 1 row 25' long, rows 5' apart, plants 1' apart in row
Plot Design: Randomized Complete Block with 3 reps

Summary: Napropamide was applied over the top of the transplants. The area then received 0.5 inches of overhead irrigation. There was no apparent phytotoxicity to the tomatoes from any treatment. Yields were not significantly different. Grassy weeds became a problem in the entire area during September.

| TREATMENT | | | YIELD | | | |
|---|---|---|---|---|---|---|
| Herbicide | Method | Lb ai/A | Number of Red Fruit | Red Fruit Wt. (lbs.) | Total Number of Fruit | Total Fruit Wt. (lbs.) |
| Handweeded Check | --- | --- | 133.3 | 22.0 | 535.7 | 69.9 |
| Napropamide | Post plant | 2.00 | 278.0 | 50.1 | 622.7 | 93.5 |
| Napropamide | Post plant | 3.00 | 203.0 | 35.3 | 667.7 | 89.5 |
| Napropamide | Post plant | 4.00 | 176.3 | 33.1 | 596.3 | 83.7 |
| LSD 5% | | | NSD | NSD | NSD | NSD |

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