

Herbicides on Strawberry: Factors impacting efficacy

Steven Seefeldt
with help from Pat Jones, OSU



Strawberry Herbicides

Herbicide	Active	Group	When	Weed
Aim EC	Carfentrazone	14	New, F-W, W-S	Post
Chateau	Flumioxazin	14	New, F-W, W-S	Post/PPI
Devrinol	Napropamide	15	New, F-W	PPI
Prowl H2O	Pendimethalin	3	New, F-W, W-S	PPI
Spartan	Sulfentrazone	14	New, F-W	PPI
Sinbar	Terbacil	5	New, F-W	Post/PPI
Stinger	Clopyralid	4	F-W	Post
Princep	Simazine	5	F-W	PPI

Strawberry Herbicides

- Will not talk about
 - Grass herbicides Select (clethodim) and Poast (sethoxydim)
 - Non selective herbicides Acetic acid and Glyphosate
 - 2,4-D
 - Dacthal
 - Bed renovation products

Factors impacting efficacy

- Post emergence herbicides
 - Plant stress
 - Surfactant
 - Weed species
 - Plant size
 - Other

Factors impacting efficacy

- Post emergence herbicides
 - Plant stress
 - Aim reduces
 - Chateau reduces
 - Sinbar reduces
 - Stinger reduces
- All plant stresses reduce efficacy

Factors impacting efficacy

- Post emergence herbicides
 - Surfactant
 - Aim coc, mso, or nis required
 - Chateau none, may injure crop
 - Sinbar none
 - Stinger none, may injure crop
- Surfactants generally increase efficacy

Factors impacting efficacy

- Post emergence herbicides
 - Weed species
 - Aim
 - Chateau
 - Sinbar
 - Stinger
- Read the label

Factors impacting efficacy

- Post emergence herbicides
 - Plant size
 - Aim up to 4" tall
 - Chateau only some burnback
 - Sinbar cotyledons
 - Stinger actively growing, pre flower
- Size really matters

Factors impacting efficacy

- Post emergence herbicides
 - Other
 - Aim rate based on weed species
 - Chateau longer half-life
 - Sinbar not on sandy soils, long ½ life
 - Stinger do not compost vegetation

Factors impacting efficacy

- Pre emergence herbicides
 - Timing
 - Incorporation
 - Soils
 - Other

Factors impacting efficacy

- Pre emergence herbicides
 - Timing
 - Chateau winter to early spring ½ rate
 - Devrinol fall to early spring
 - Prowl H₂O fall to early spring
 - Spartan during dormancy
 - Sinbar fall to winter
 - Princep after harvest through Nov.
- Emerged weeds not controlled*

Factors impacting efficacy

- Pre emergence herbicides
 - Incorporation
 - Chateau at least ¼" irrigation
 - Devrinol wet soil 2 to 4" deep
 - Prowl H₂O wet to weed emergence zone
 - Spartan ½ to 1" irrigation
 - Sinbar ½ to 1" irrigation
 - Princep irrigate
- Often activation requires incorporation

Factors impacting efficacy

- Pre emergence herbicides
 - Soils
 - Chateau no restrictions
 - Devrinol no restrictions
 - Prowl H₂O no restrictions
 - Spartan not on coarse sandy soils <1% OM
 - Sinbar not on coarse sandy soils <2% OM
 - Princep not on sandy soils
- Know your soils

Factors impacting efficacy

- Pre emergence herbicides
 - Other
 - Chateau can injure crop foliage
 - Devrinol 4 lb ai/A max for year
 - Prowl H₂O do not cover with plastic
 - Spartan can injure crop foliage
 - Sinbar 2 year replant interval
 - Princep more active in winter

Injury example

- Spartan Splash
 - Julie Pond sent this to me with permission from Pat Jones, faculty research assistant at OSU, North Willamette REC, Aurora, OR



Spartan Splash

- June 14, 2017 the field sprayed post over the top with 2 oz/A Spartan 4F + 1.5 pts/A Prowl H₂O
 - The spartan rate is ½ recommended
- Field was planted June 21, 2017
 - Planting temperature was 76
 - Following days were 85, 92, 99, and 101
 - Watered (several inches) to compensate

Spartan Splash

- About 3 weeks later noticed injury
- Injury symptoms looked like a fertilizer or surfactant burn
- Plants in the middle looked worst
- Assumed 'Spartan Splash' and added more water

Spartan Splash

- July 25, 2017



Spartan Splash

- July 31, 2017



Spartan Splash

- August 14, 2017



Spartan Splash

- August 30, 2017



Spartan Splash

- September 13, 2017



Spartan Splash

- September 13, 2017



Spartan Splash

- September 13, 2017



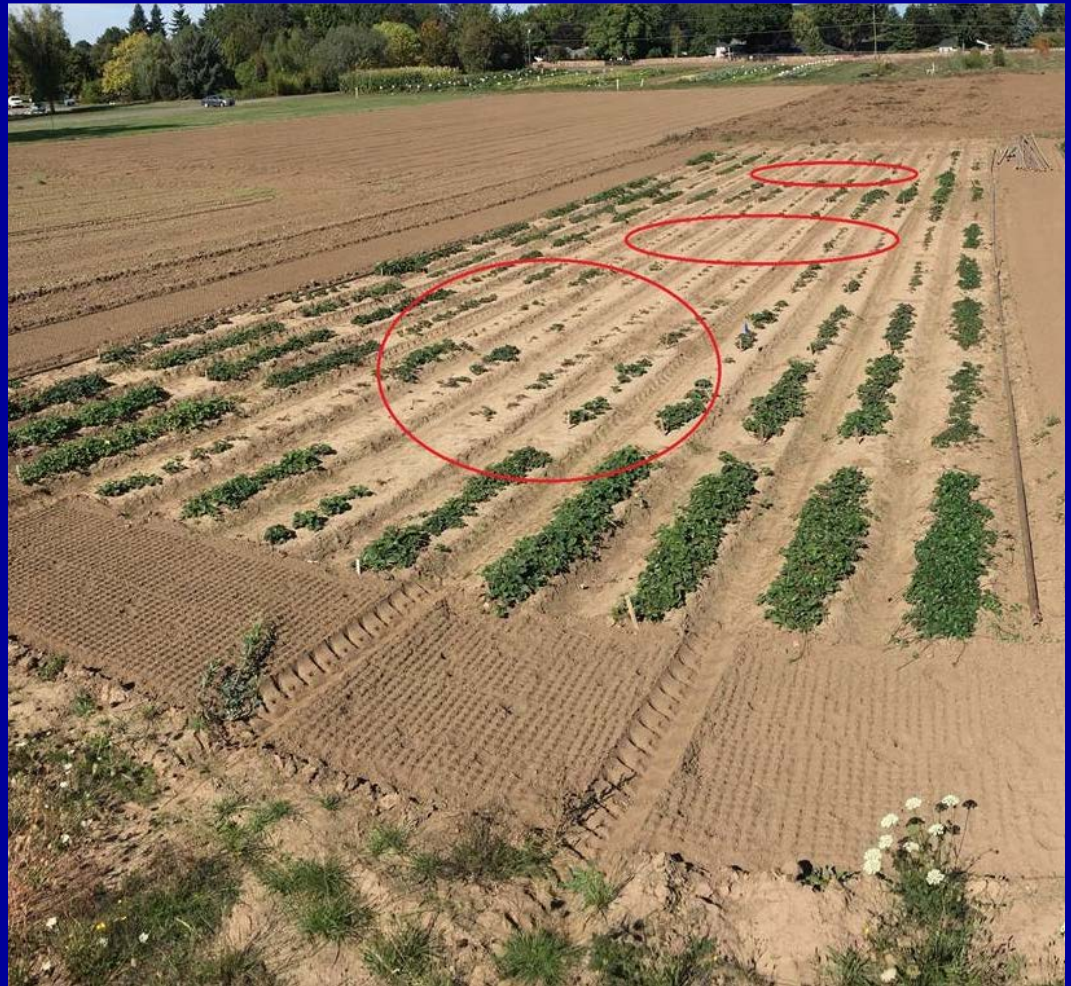
Spartan Splash

- October 4, 2017



Spartan Splash?

- Actually a case of moving herbicide into the strawberry root zone



Other Herbicide Concerns

- Herbicide resistance
 - 5 herbicide groups
 - Some weeds are now resistant to all but Devrinol

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Stinger	Clopyralid	4
Princep	Simazine	5

Other Herbicide Concerns

- Varietal differences
 - Reports that there are differences in tolerances to these herbicides by different strawberries
 - I have not read any studies confirming this
 - Be careful of getting carried away

Other Herbicide Concerns

- Increased microbial degradation
 - There are studies confirming that for certain soil applied herbicides, degrading microbe populations can increase resulting in faster breakdown of the herbicide
 - This would lead to weeds coming back more quickly
 - Warmer soils mean faster microbial herbicide degradation

Questions-Discussion





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