



WEED CONTROL IN STRAWBERRY

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SUMMARY

Chateau (flumioxazin) and GoalTender (oxyfluorfen) are registered as strawberry herbicides. Chateau and GoalTender can be applied to fallow beds before transplanting. Chateau can also be applied to the furrows after transplanting. GoalTender can “co-distill” or “lift off” from moist soil, while Chateau does not “lift off”.

We have heard reports of increased injury from strawberry grown on beds that use impermeable films. Chateau at 1.5 & 3 oz product, and GoalTender at 0.5 and 1 pt/A were applied to fallow beds before transplanting. We tarped half of the beds with HDPE and half with TIF. Injury was greater and plants were smaller where GoalTender at 1 pt/A was applied under TIF compared to HDPE (Fig. 1; Table 1). Plant response difference between mulch films was not seen with Chateau.

Select Max used to control rye covercrop in the furrow was safe to strawberry (Fig. 2; Table 2).

Steam applied in strawberry nurseries controlled Verticillium and other pests (Fig. 3)

MATERIALS AND METHODS

TIF & HDPE film:

- ❖ Chateau 1.5 & 3 oz/A; GoalTender 0.5 & 1 pt/A applied 10.17.17
- ❖ Black Cast (HDPE) 1.5 mil & Ozgard black (TIF) 1.5 mil installed 10.18.17
- ❖ Cabrillo strawberry transplanted 11.15.17

❖ Select Max ® for control of rye covercrop in furrows:

- ❖ Merced rye was planted in the furrows 10.18.17
- ❖ Select Max at 16 oz/A was applied 1.12.18
- ❖ Data collected was strawberry injury estimates, plant perimeters, fruit yield and weed control.

❖ Field steaming in strawberry nurseries

- ❖ Three trials were conducted in Butte Valley strawberry nurseries in August and September 2018. Soil temperatures were raised to 158°F for at least 20 minutes.

Herbicide response to mulch type

Objective:

To determine if mulch permeability affects herbicide injury to strawberry



Figure 1: Effect of HDPE and TIF mulch film on crop tolerance to GoalTender and Chateau.

Crop injury %

Treatment	Standard	TIF
Control	0 c	0 c
Chateau 1.6 oz	3 bc	13 b
Chateau 3 oz	13 b	5 bc
GoalTender 0.5 pt	3 bc	13 b
GoalTender 1 pt	3 bc	25 a

Strawberry Stand%

Treatment	Standard	TIF
Control	92 a	82 bc
Chateau 1.6 oz	95 a	89 ab
Chateau 3 oz	88 ab	90 ab
GoalTender 0.5 pt	88 ab	88 abc
GoalTender 1 pt	92 a	79 c

Strawberry yield tons/A

Treatment	Standard	TIF
Control	30.6 a	28.3 a
Chateau 1.6 oz	30.8 a	28.0 a
Chateau 3 oz	28.1 a	29.8 a
GoalTender 0.5 pt	30.6 a	30.6 a
GoalTender 1 pt	32.0 a	29.7 a

Table 1: Effect of film type HDPE – standard film and TIF – impermeable film on strawberry tolerance to herbicides. Shown are effects on strawberry injury, stand and yield.

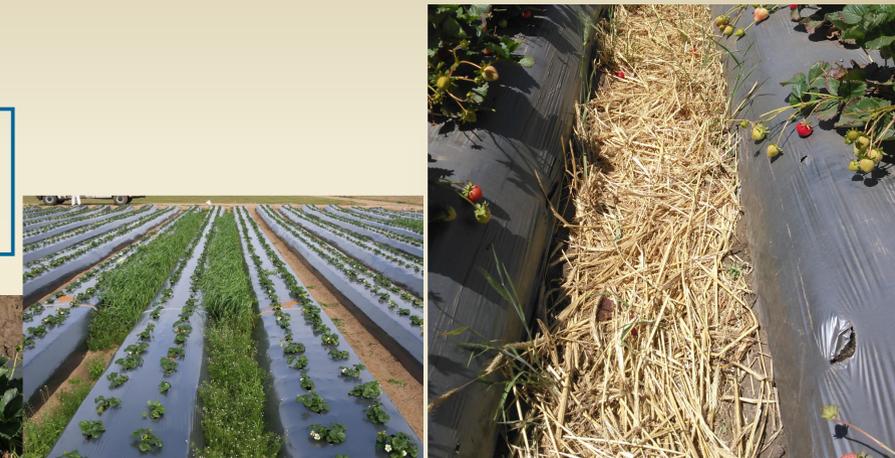


Figure 2: Strawberry furrows were planted in Rye (left), allowed to grow and then killed with Select herbicide, and then driven over by tractor tires to leave a straw mulch (right).

Strawberry response

Treatment	Injury %	Perimeter inches	Yield t/A
Select 16 oz	0 a	36.3 a	30.3 a
Rye no herbicide	0 a	27.0 b	28.0 a
Bare ground	0 a	27.9 b	25.9 a

Weed Control

Treatment	Total # 25 ft ²
Select 16 oz	5 b
Rye no herbicide	5 b
Bare ground	40 a

Table 2: Strawberry was not injured, stunted nor were yields reduced by rye cover crop or Select.

Strawberry nurseries - Verticillium

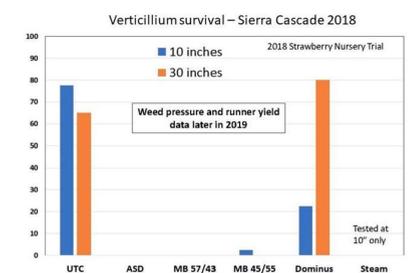


Figure 3: Steam application in Butte Valley strawberry nursery Sept. 2018 (photo left data right).

CONCLUSIONS

- ❖ Strawberry was more sensitive to injury from GoalTender where TIF is used compared to HDPE
- ❖ Chateau performed similarly under TIF & HDPE
- ❖ Use of Select for control of cover crops in the furrows was safe to strawberry
- ❖ Steam controlled Verticillium at the nurseries

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