Evaluation of New Potential Herbicides and Weed Control Systems for Celery

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Preemergence/postemergence Herbicides Registered on Celery

Herbicide	% acres treated
Lorox	28
Caparol	72
Treflan	1

Calif. Dept Pesticide Regulation 2000

Background on the Weed Control Project

- Through the efforts of this research project Dual Magnum and Chateau are both in the registration process in California for use on Celery

Update on the Registration Status of the Materials Researched Through this Project:

1. **Dual Magnum**:

   - This is in the registration process. Tolerances have been submitted to the EPA and it is now a matter of time (1year???). It will probably be registered as a 24c.

Dual Magnum for California Celery

- This material brings a specific tool for celery production. It is specific for yellow nutsedge production, but it is also a reasonably good broadleaf and grass herbicide

Update on the Registration Status of the Materials Researched Through this Project:

2. Chateau:

- **The manufacturer is supportive of registering this material on celery. Residue samples generated by the IR-4 Program are being submitted to EPA as we speak. Estimated timetable for availability on celery is two years.**

Untreated

Chateau 0.031

It is similar to Goal but has no tendency to lift off and cause problem to neighboring crops

Chateau 0.031

Chateau 0.062

Summary Findings To Date

- Dual is safe on a wide variety of celery varieties
- It is safe for both pre and post-transplant use on celery (improved weed control seen with post-transplant use)
- It provides control of Yellow Nutsedge which fills a weed control weakness by the other currently registered materials

Summary Findings To Date

- Chateau provides excellent pretransplant weed control and has been safe in numerous trials
- Chateau will provide growers with a pretransplant followed by post-transplant (i.e. Caparol and Lorox) which should improve weed control in particularly weedy fields

2007 Celery Herbicide Evaluations

Continued herbicides evaluations on:

- Chateau (flumioxazin)
- Goal Tender (oxyfluorfen 4F)
- Dual Magnum (*S*-metolachlor) and the
- Standards: Lorox (linuron) and Caparol (prometryn)

2007 Celery Herbicide Evaluations

Initiated herbicide evaluations on:

- Spartan (Sulfentrazone)
- Prowl H20 (Pendimethalin)
- Nortron (Ethofumesate)
- Everest
- Nortron

Materials Being Evaluated for Use on Celery

Dual Magnum (s-metolachlor)
Chateau (flumioxazin)
Goal Tender (oxyfluorfen 4F)
Spartan (sulfentrazone)
Prowl H20
Nortron
Gallery*
Everest*

* - added this year

2007 Celery Weed Evaluations

Material	Rate	Phyto	Weeds
Dual Magnum + Caparol	0.6 + 3.0 pint	1.1	0.0
Prowl H2O	1.6 pint	1.1	38.8
Prowl H2O + Caparol	1.6 + 3.0 pint	0.8	5.5
Chateau	0.37 lb	1.1	1.4
Chateau	0.49 lb	1.6	1.1
Goal Tender	8.0 oz	1.1	8.6
Goal Tender	16.0 oz	1.8	10.3
Untreated		0.0	125.1

2007 Celery Weed Evaluations

Material	Rate	Phyto	Weeds
Everest	0.029 lb	4.1	50.8
Nortron	1.0 qt	1.0	29.1
Nortron + Caparol	1.0 qt + 3.0 pt	0.6	3.4
Gallery	0.6 lb	2.1	1.3
Spartan	3.0 oz	1.8	15.1
Caparol	3.0 pint	1.3	0.0
Untreated	---	0.0	125.1

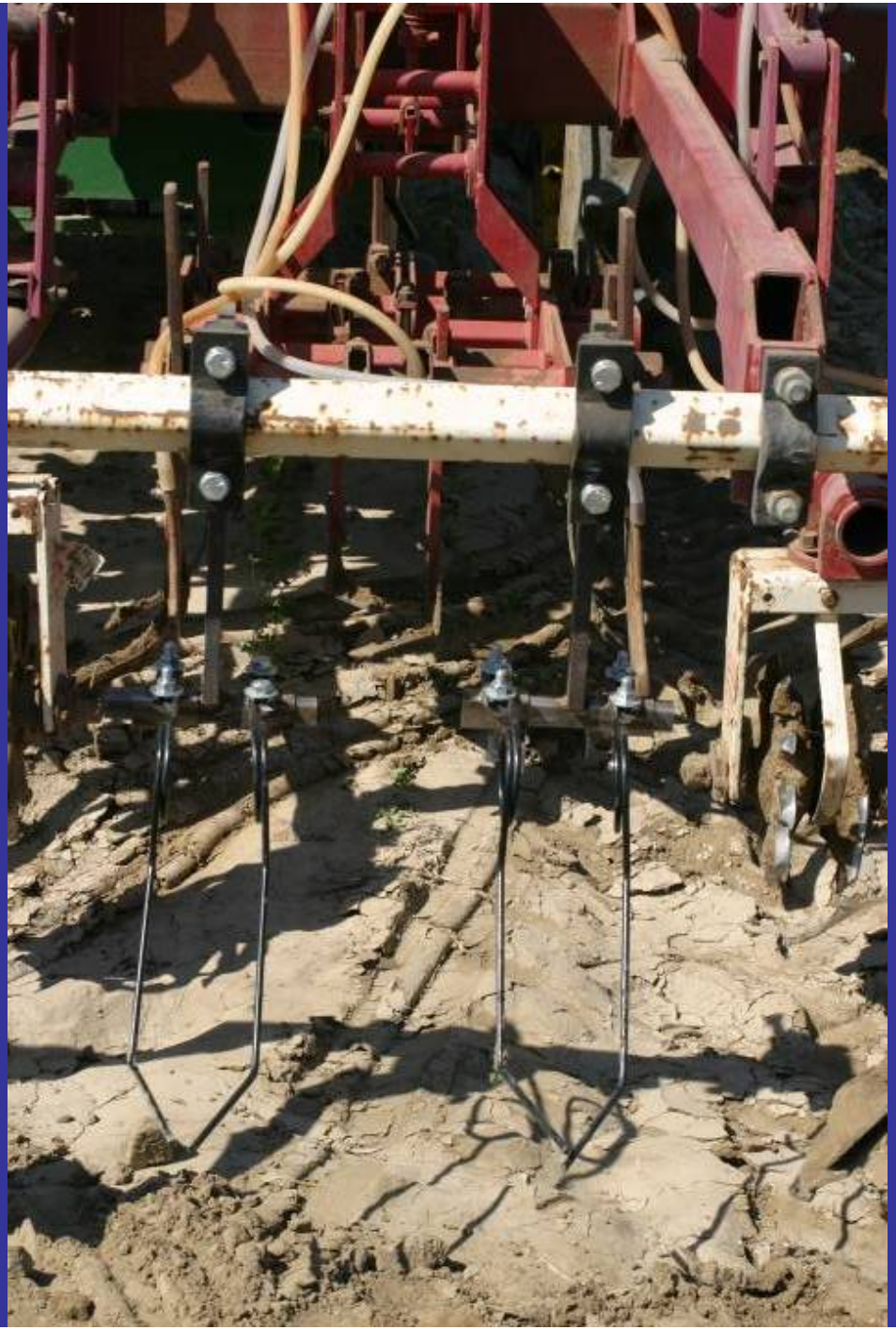
2007 Directions

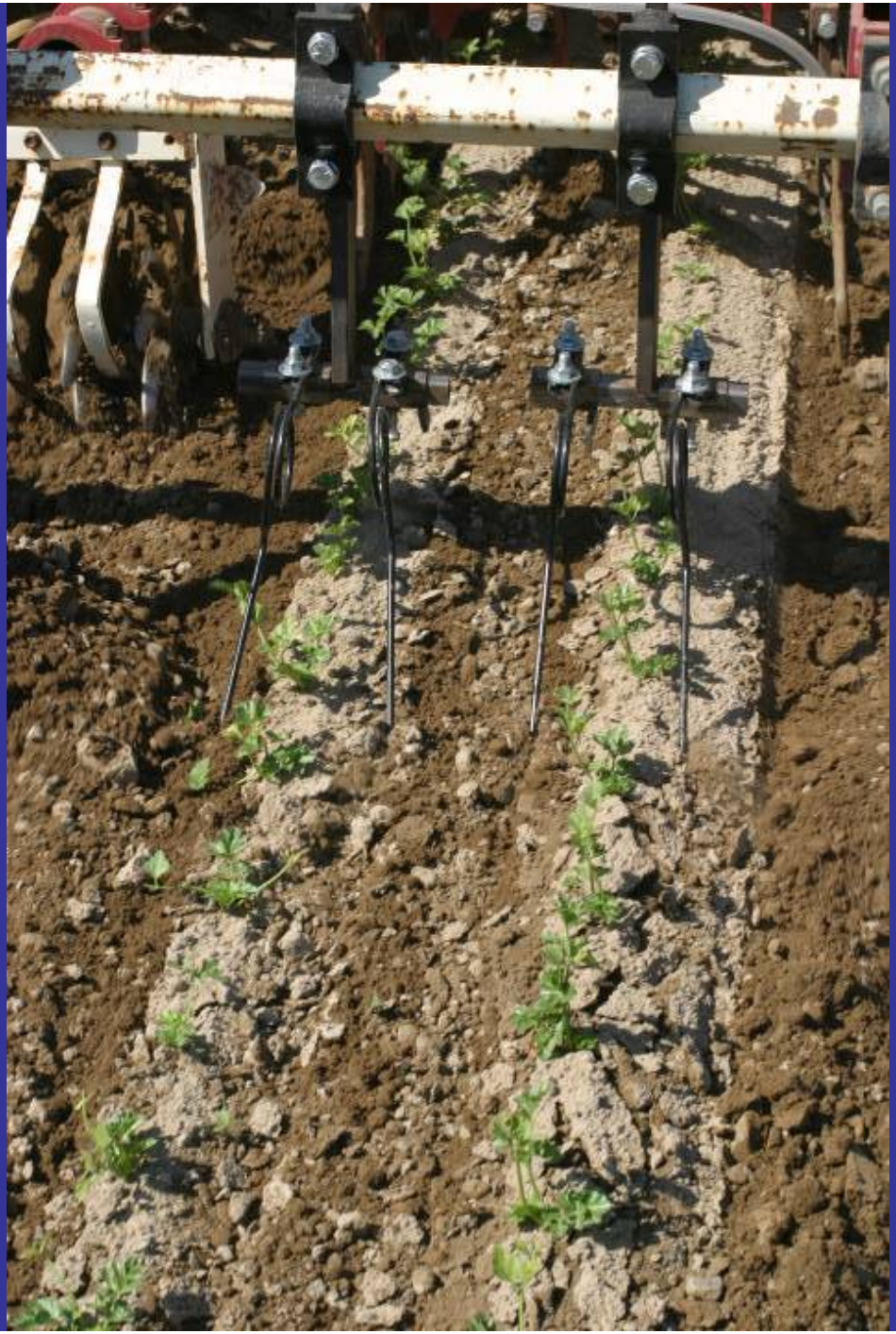
- Spartan (sulfentrazone), FMC Corp.
- Prowl H20 (pendimethalin), BASF Corp.
- Nortron (ethofumasate), Bayer Crop Science
- Gallery (Isoxaben), Dow AgroSciences
- Precision Cultivation


Precision Guidance
of Cultivation
ECO-DAN


ECO-DAN


Canon





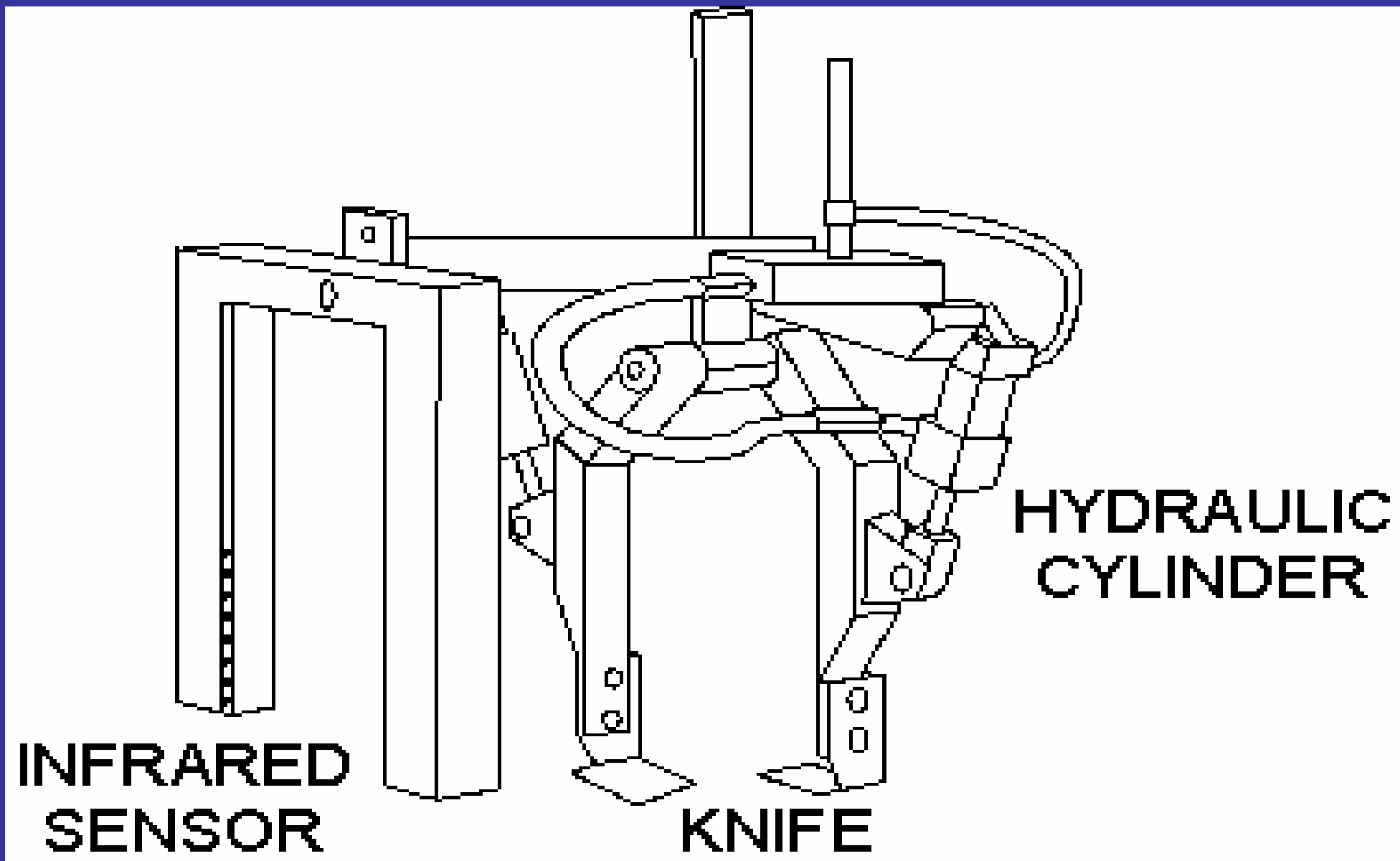
Percent Weed Control Following Cultivation with Torsion Weeder

Treatment	Purslane	Malva	Total
Standard Cultivation	29.4	61.7	49.3
Standard + 7 mm	60.8	66.9	71.9
Standard + 9 mm	89.6	76.2	82.3

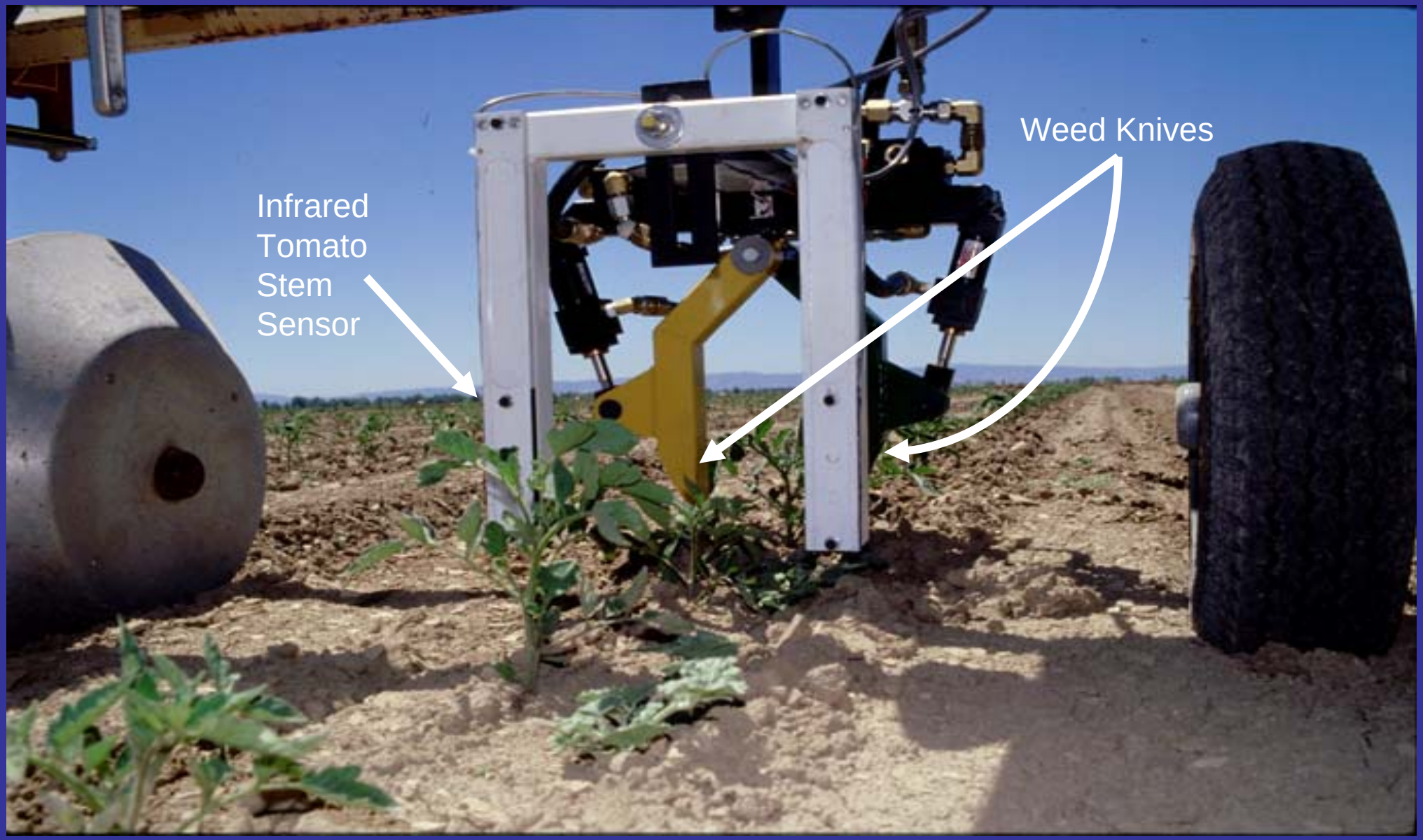
Automatic weed control system for transplanted processing tomatoes using X-ray stem sensing

David Slaughter, Ron Haff, & Ken Giles

UC Davis & USDA


HYDRAULIC
CYLINDER
INFRARED
SENSOR
KNIFE

Automated Weed Control in Transplanted Tomatoes



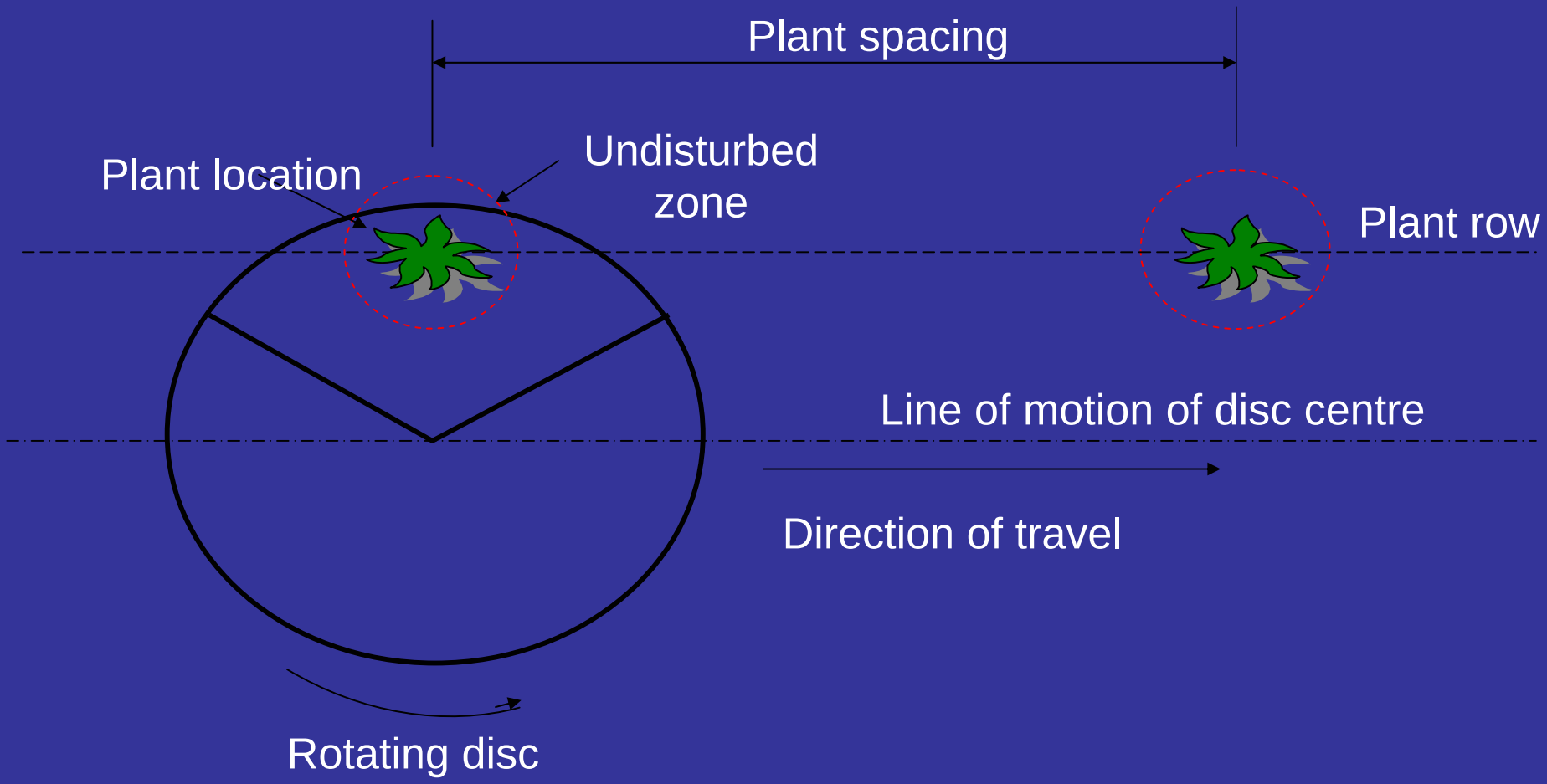

15 days


21 days


27 days

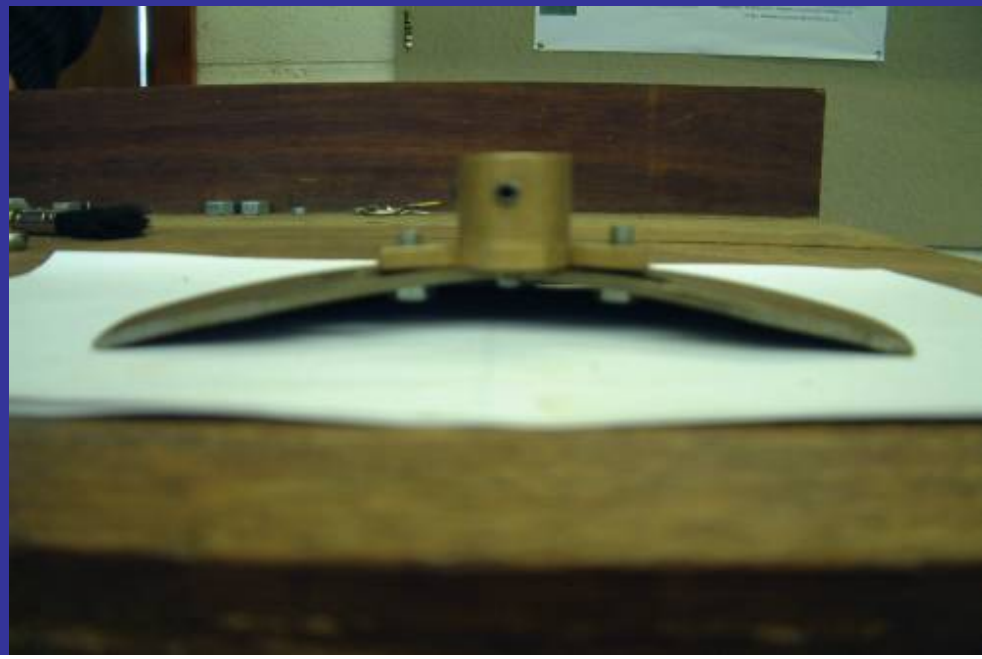

32 days

Concept


Plant spacing
Undisturbed zone
Plant location
Plant row
Line of motion of disc centre
Direction of travel
Rotating disc

Flat disc

Convex disc



Prototype Intra-row weeder

Garford Farm Machinery

Treated (right) and untreated (left) beds taken two weeks after treatment

2008 Proposal

- We are proposing to continue screening new weed control materials for use on celery and to keep abreast of new weed control technologies (i.e. precision cultivation, split knife cultivator) that would help to keep the California celery industry current of new weed control technologies

Acknowledgments

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