

# Weed Management Update

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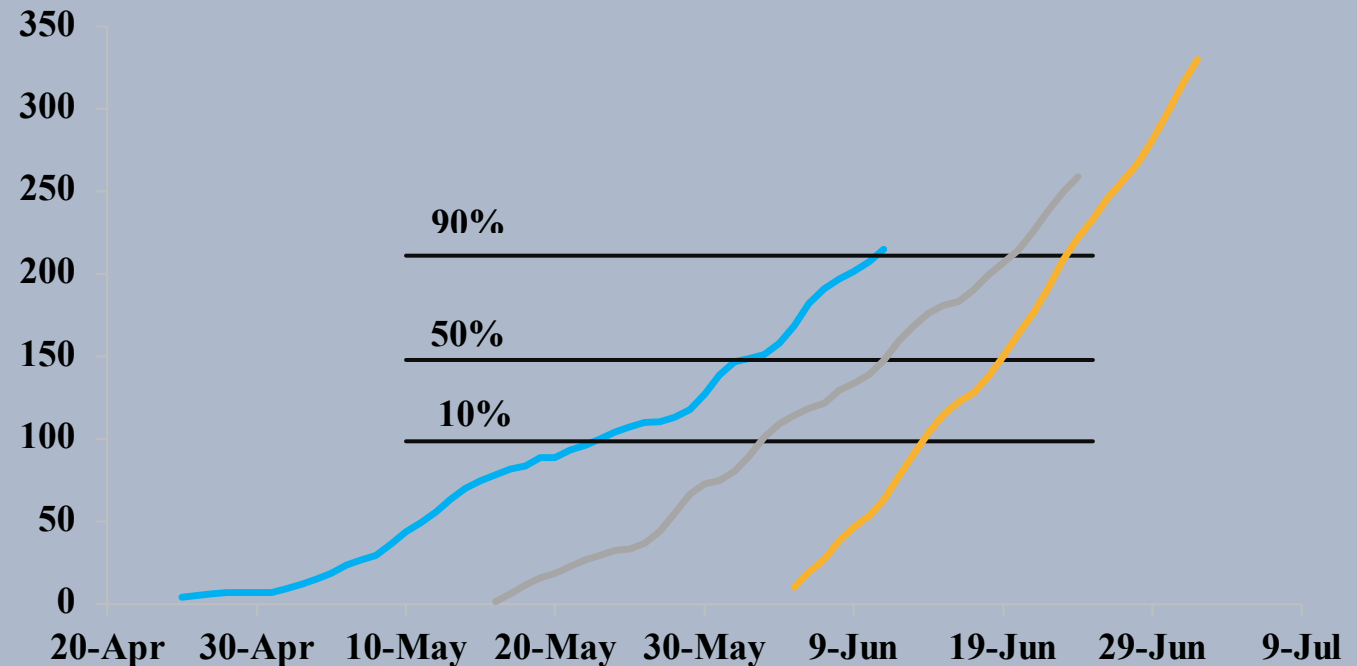
# Topics

- Grass weed control issues – Sprangletop
- Herbicide resistant screening
- Cerano application timing
- New herbicides
  - Loyant (florpyrauxifen-benzyl)
  - Pyraclonil -2022
  - Roxy rice – 2023
  - FMC new grass herbicide

# Sprangletop issues

- Water depth
- Herbicide
  - Butte
  - Cerano
  - Thiobencarb
  - Clincher

Biotype	Flood Depth	Panicles per Plant	Seed per Panicle	100 Seed Weight	Total Seed	Emergence
	Inches			mg		%
S	2	4 b	355 a	17 b	1211 b	15 b
R	2	19 a	78 b	19 b	1429 ab	54 a
S	4	-	-	-	-	-
R	4	17 a	101b	31 a	1711 a	17 b
S	8	-	-	-	-	-
R		-	-	-	-	-



## Number of Observed Herbicide Resistance from 2019 Herbicide Resistant Screening Samples

Species	Bolero	Butte	Cerano	Clincher	Regiment	Granite	SuperWham	Shark	Grandstand
Barnyardgrass(4)	1	1	0	1	1	-	1	-	-
Early Watergrass(11)	0	2	0	2	3	-	3	-	-
Late Watergrass(7)	0	4	0	7	7	-	5	-	-
Smallflower Umbrella	0	0	-	-	21	6	29	0	0
Sedge(33)									
Bearded Sprangletop(16)	0	0	0	3	-	-	-	-	-
Ricefield Bulrush(1)	-	0	-	-	-	0	-	-	0

## Susceptible Population

LWG-15-LB



Untreated

Clincher CA

Abolish 8 EC

Granite SC

Regiment CA

## Your Sample

LWG-15-04



Untreated

Clincher CA

Abolish 8 EC

Granite SC

Regiment CA

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Rice Injury for Cerano 5MEG at Three Rates applied on Continuous Flood vs. Leather's Method for 2019 and 2020

2019				2020		
Treatment	Bleaching 60 DAT	Tiller Count 30X30 Quadrant	Plant Height (cm)	Bleaching 60 DAT	Tiller Count 30X30 Quadrant	Plant Height (cm)
Day of seeding						
1 Cerano 5MEG 8 lbs/A	0	50	88	0	12	78
2 Cerano 5MEG 10 lbs/A	0	52	87	0	15	80
3 Cerano 5MEG 12 lbs/A	0	54	86	0	17	78
4 Untreated	0	36	81	0	0	0
Leather's Method						
5 Cerano 5MEG 8 lbs/A	0	45	84	0	11	76
6 Cerano 5MEG 10 lbs/A	0	38	84	0	13	80
7 Cerano 5MEG 12 lbs/A	0	28	86	0	9	76
8 Untreated	0	42	82	0	0	0
LSD =0.05	-	15	4	-	7	5

Weed Control and Rice Yield after Treatment with Three Rates of Cerano Applied on Continuous Flood vs. Leather's Method for 2019 and 2020

Treatment	2019			2020	
	<i>Echinochloa</i>	<i>Leptochloa</i>	Yield	<i>Echinochloa</i>	<i>Leptochloa</i>
	spp. 60 DAT	<i>fusca</i> 60 DAT	lbs/A	spp. 60 DAT	<i>fusca</i> 60 DAT
Day of seeding					
Cerano 5MEG 8 lbs/A	100	100	8350	54	95
Cerano 5MEG 10 lbs/A	100	100	7892	69	97
Cerano 5MEG 12 lbs/A	100	100	8492	71	92
Untreated	0	0	4596	0	0
Leather's Method					
Cerano 5MEG 8 lbs/A	100	100	6162	21	71
Cerano 5MEG 10 lbs/A	100	99	5732	24	71
Cerano 5MEG 12 lbs/A	100	100	5092	24	70
Untreated	0	0	4418	0	0
LSD =0.05	-	26	1423	12	9

# New herbicides

- Loyant, 2021, auxin type herbicide
- Pyraclonil, 2022, protox inhibitor
- Oxyfluorfen on Roxy rice, 2023, protox inhibitor
- FMC new grass herbicide, 2024, DHODH inhibitor



# Loyant

- Loyant represents the latest member of the synthetic auxin herbicide chemotype (HRAC group O), the arylpicolimates
- Loyant exhibits unique molecular interaction to auxin receptors as compared to other auxin herbicides
- Loyant is a systemic herbicide mainly absorbed by foliage but also by the roots of plants. It is translocated through the phloem and xylem and accumulates in the meristematic tissue where it exerts its herbicidal action

# Loyant

- Rate: 1.00-1.33 pint/A. You can have two applications (total 2.66 pint/A)
- Adjuvant: Methylated seed oil, others
- Ground application: Apply in 10 gpa or more when apply by ground
- Water management: Residual water remaining in the field does not adversely affect weed control so long as weeds are at least 70% exposed
- Timing: Loyant can be applied from 2 leaf stage with no exposed roots up to 60 days before harvest
- Tank mixes: Can be tank mixt with Clincher, Regiment, Granite, propanil and Grandstand
- No varietal response
- **Recommendation: It must be used as part of a program that utilizes multiple residual herbicides in front of a timely application of Loyant**

Percent visual crop injury of different rates and combinations of Loyant on rice at Arbuckle

Herbicide Treatments	Bleaching		Chlorosis		Necrosis	
	14 DAT	28 DAT	% of untreated control		14 DAT	28 DAT
			14 DAT	28 DAT		
Loyant 1/2X	2	0	2	0	4	0
Loyant 1X	5	0	5	1	5	2
Loyant 2X	5	0	5	0	12	3
Loyant 1X + Propanil 1X	13	1	14	3	35	7
Loyant 1X + Granite min rate	5	1	5	2	6	3
Loyant 1X + Granite max rate	5	1	6	2	11	3
Loyant 1X + Regiment min rate	5	1	4	1	8	2
Loyant 1X + Regiment max rate	5	2	5	2	7	4

# Percent weed control of different rates and herbicide combinations of Loyant at 14 days after treatment at Biggs

Treatments	Watergrass	Bulrush	Smallflower	Ducksalad
Loyant 1/2X	26	68	66	98
Loyant 1X	36	78	71	98
Loyant 2X	61	73	73	98
Loyant 1X + Propanil 1X	90	96	97	99
Loyant 1X + Granite min rate	58	63	60	99
Loyant 1X + Granite max rate	84	68	73	100
Loyant 1X + Regiment min rate	57	58	59	100
Loyant 1X + Regiment max rate	91	61	70	100

## Cerano – Loyant program

Treatment	Timing	Rate	Watergrass	Sprangletop	Smallflower	Rice bulrush	Ducksalad	% Stand Reduction 21 DAA	Yield lbs/A
Cerano/Loyant/ SuperWham	DOS/4-5 leaf/full tiller	12 lb/1.37 pt/ 6 qt	90	90	96	97	97	0	6,059
Cerano/ Loyant+Clincher/ SuperWham	DOS/4-5 leaf/full tiller	12 lb/1.37 pt + 15 oz/ 6 qt	94	89	89	97	80	0	5,467
Cerano/ Loyant+Granite/ SuperWham	DOS/4-5 leaf/full tiller	12 lb/1.37 pt + 2.8 oz/ 6 qt	98	94	98	98	98	0	6,971
Cerano/ Loyant+Clincher/ SuperWham	DOS/4-5 leaf/full tiller	12lb/1.67 pt + 2.8 oz/ 6 qt	95	98	96	98	96	0	6,922
Cerano/Regiment/ SuperWham	DOS/4-5 leaf/full tiller	12 lb/0.67 oz/ / 6 qt	80	92	88	93	85	2	1,731

# Loyant Weed control

## Control

- Barnyardgrass
- Rice flatsedge
- Ducksalad
- Redstem
- Monochoria
- California arrowhead
- Waterhyssop species
- Field bulrush

## Suppressed

- Early water grass
- Late watergrass

## Control- biotype dependent

- Smallflower umbrellasedge



# Loyant applied alone- Willows

21 DAT



60 DAT



Nontreated control



# Loyant applied in a program

Butte



Nontreated control



Cerano



Bolero



# Herbicide Simulated Drift Study

- Newly planted pistachio, almond, walnut, prune, and peach were treated in June 9, 2020. Established grapes were treated on June 11, 2020.
- Loyant was applied at 0, 0.5, 1.0, 3.0 and 10% of the use rate of 1.0 pint/A with methylated seed oil
- Data: Symptoms, measuring growth and development

## Pyraclonil Research

- Excellent control on broadleaf weeds, smallflower, and grasses excluding sprangletop
- No water holding for pyraclonil
- Effective granule form is available
- Conducted research on time of application showed greater efficacy at day of seeding
- M105, M205, M206, M209, and S102 rice showed great tolerance to pyraclonil
- No cross-resistance herbicide resistant weeds for pyraclonil

## Roxy Rice Research

- Good rice tolerance up to 1.5-2.00 lb ai/A
- Preplanting application
- No resistant weeds for this mode of action
- Good grass and broadleaf weed control
- Poor on rice bulrush

## New FMC Grass herbicide

- New mode of Action
- Excellent activity on grasses with some activity on selected broadleaf
- Wide window of application from 2 leaf-stage to early tillering
- M105, M205, M206, M209, and S102 rice showed great tolerance to TVE29
- TVE29 will be available in granule form

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An aerial photograph of a vast agricultural landscape. The foreground and middle ground are dominated by large, rectangular plots of vibrant green crops, likely alfalfa or a similar forage crop, arranged in neat rows separated by dirt roads. To the left, there are several large, dark, rectangular ponds or reservoirs. In the upper center, a cluster of white industrial buildings, possibly a dairy processing plant, is visible, surrounded by several large white storage silos. The background shows more green fields and a few scattered trees under a clear sky.

# Questions