

# RICE SYSTEMS PROJECT OVERVIEW

Will alternative planting systems work for you?



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# Alternative Stand Establishment Research

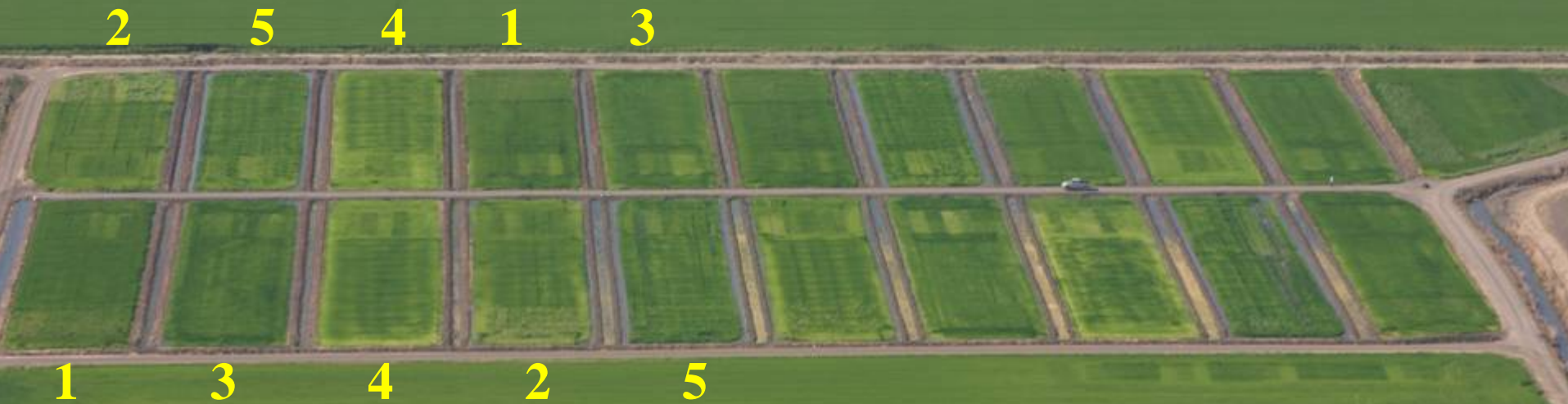
**Objective: To determine if different stand establishment methods are effective in weed resistance management and if agronomic practices can be adapted to maintain yield.**

**Why? Driven by weed resistance, high costs, but with important implications for all aspects of crop management- especially N management**

# Alternative Stand Establishment Research

- a. **Substitute for the lack of crop rotation**
- b. **Stale seedbed & drill-seeding: glyphosate and pendimethalin**
- c. **Minimum soil disturbance depletion of weed seedbank**

# Alternative Stand Establishment Systems



1. Conventional water-seeded
2. Conventional drill-seeded
3. Delayed stale seedbed, water-seeded
4. Delayed stale seedbed no spring till water-seeded
5. Delayed stale seedbed no spring till drill-seeded

# Alternative Stand Establishment Research

## General Treatments

- Fall tillage to incorporate straw (disk 2 or 3x)
- Winter flood
- Phosphorus flown over all plots in the spring

# Alternative Stand Establishment Systems

## Specific Treatments

1

1

1

1

1. Conventional water-seeded
  - Spring Tilled
  - Nitrogen Preplant Incorporated
  - Flooded and Seeded

# Alternative Stand Establishment Systems

## Specific Treatments

2

2

2

2

### 2. Conventional drill-seeded

- Spring Tilled
- Rice Drill Seeded
- Nitrogen Applied 50 lb N/ac Preplant + 100 lb N/ac topdress
- Flush Irrigated 1-2x for stand establishment

# Alternative Stand Establishment Systems

## Specific Treatments

3

3

3

3

### 3. Delayed stale seedbed, water-seeded

- Spring Tilled
- Nitrogen Preplant Incorporated
- Flushed to germinate weeds
- Treated with Roundup (10-14 days)
- Flooded
- Water Seeded

# Alternative Stand Establishment Systems

## Specific Treatments

4

4

4

4

### 4. Delayed stale seedbed no spring till water-seeded

- No Spring Tillage
- Flushed to germinate weeds
- Treated with Roundup (10-14 days)
- Nitrogen 50 lb N/ac prior flooding + MT topdress 100 lb N/ac
- Flooded and Water Seeded

# Alternative Stand Establishment Systems

## Specific Treatments

5

5

5

5

### 5. Delayed stale seedbed no spring till drill-seeded

- No Spring Tillage
- Flushed to germinate weeds
- Treated with Roundup (10-14 days)
- Drill Seeded asap following Roundup
- Flush Irrigated
- Nitrogen 50 lb N/ac prior flooding + MT topdress 100 lb N/ac

# Field Operations



- A. No-till drill in conventional**
- B. Rice Stand in conv drill seeded**
- C. Rice stand in no-till drill**
- D. N application before perm flood**



# Alternative Stand Establishment Research

## Rice Yields at 14% Moisture

System	2004	2005	2006	Mean
1. WS Conv	9511	7295	7923	8243 a
2. DS Conv	9644	7509	8140	8431 a
3. WS Stale	8426	6555	7379	7453 b
4. WS no-till	9303	7299	7457	8020 ab
5. DS no-till	9191	7404	8966	8520 a
ANOVA	ns	ns	ns	0.0042

NOTE: All yields taken from 150 lb N/ac

# Alternative Stand Establishment

## 2007 Grower no-till water-seeded "trials"

Operation	Grower A	Grower B	Grower C	Ave
1. Yield	Same	Same to more	600 lb less	Same
2. Weeds	Same but less	Same	Same but less	Less
3. Stale	yes	yes	no	Variable
4. Herb	lower rates	diff program	1 less herbicide	Same to less
5. Fertilizer	3 topdress	3 topdress	3 topdress	3 topdress
6. Tractor pass	6 less	8 less	7 less	7 less
7. Air passes	3 more	4 more	3 more	3 more
8. Seed rate	20 lb/ac more	same	25 lb/ac more	20 lb/ac more
9. Econ	Better	Better	Same	Same to better

*Thank you*

