

# **S.A.F.E. Program** **(Sports Athletic Field Education)**

An innovative approach for Urban  
Ag. and NR Extension

- **Raymond Bader, CEA-NR**
- **James McAfee, Extension Turfgrass Specialist**

# What is SAFE?

- A program designed to develop a turfgrass management protocol for each specific field based on a comprehensive evaluation and monitoring of the field's resources and use.
- Focus:
  - Audit of Athletic Fields
  - Irrigation Audit

# Benefits from well managed fields

- Provide safer playing conditions
- Improves player performance
- Efficient use of resources
  - water, fertilizers, pesticides, manpower
- School / community pride

# Management based on:

- Turfgrass quality
  - Type, root depth, frequency of use
- Soil properties of the area
  - Physical - soil type, texture, depth, compaction
  - Chemical - pH, salinity, fertility
- Irrigation
  - comprehensive irrigation audit of hardware and delivery
- Management practices & field use



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# Cultural Practices for Sports Fields

- Fertilization
- Mowing
- Irrigation
- Aerification
- Topdressing

# Fertilization Program

- ☰ Soil testing
- ☰ Single vs. multiple use facility
- ☰ Fertilizer sources
- ☰ Turf use

# Mowing Sports Fields

 Key cultural practice







# Irrigation Principles for Sports Fields

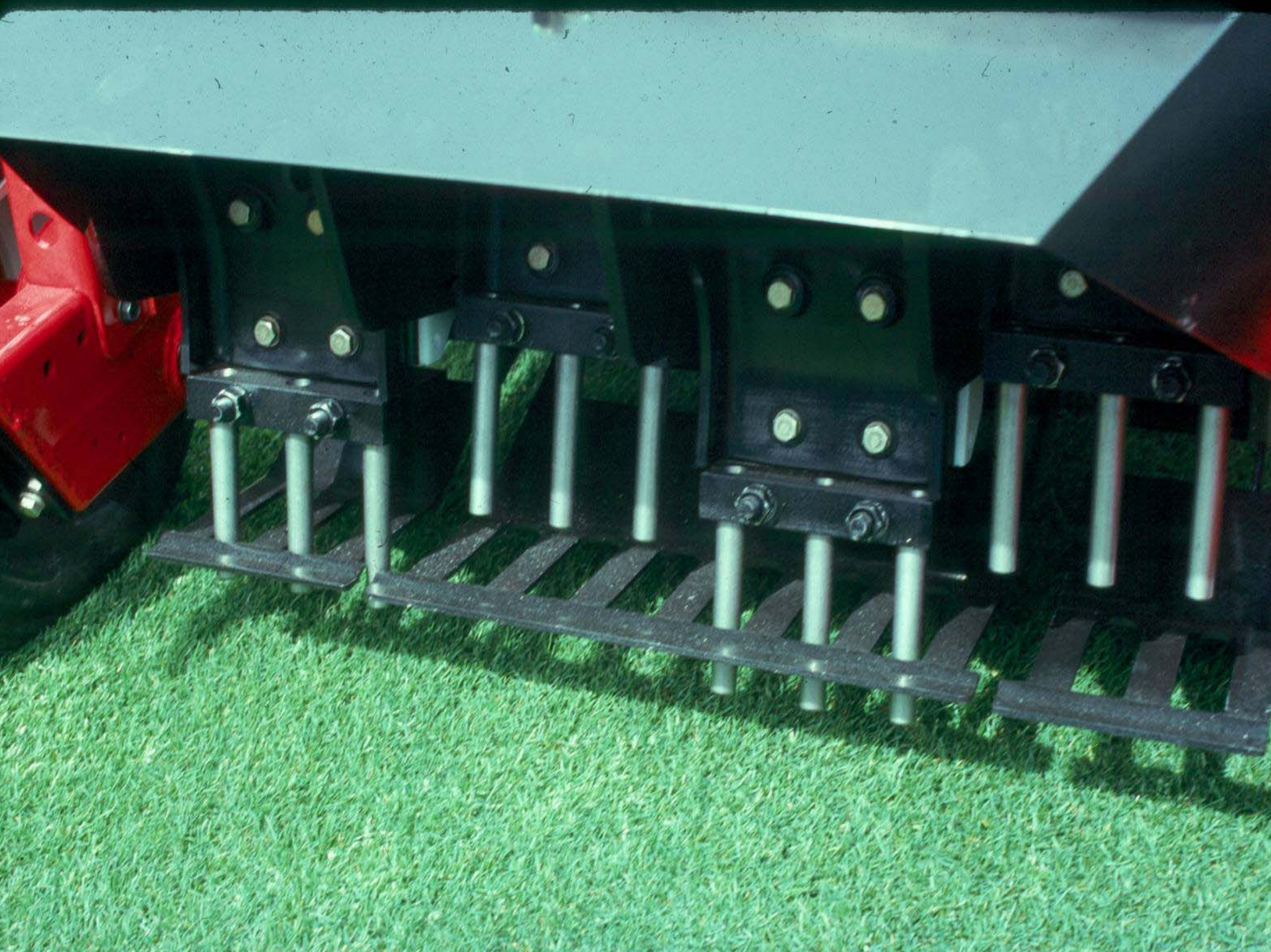
- Turfgrass
- Soil type
- Use
- Fertilization program
- PET values

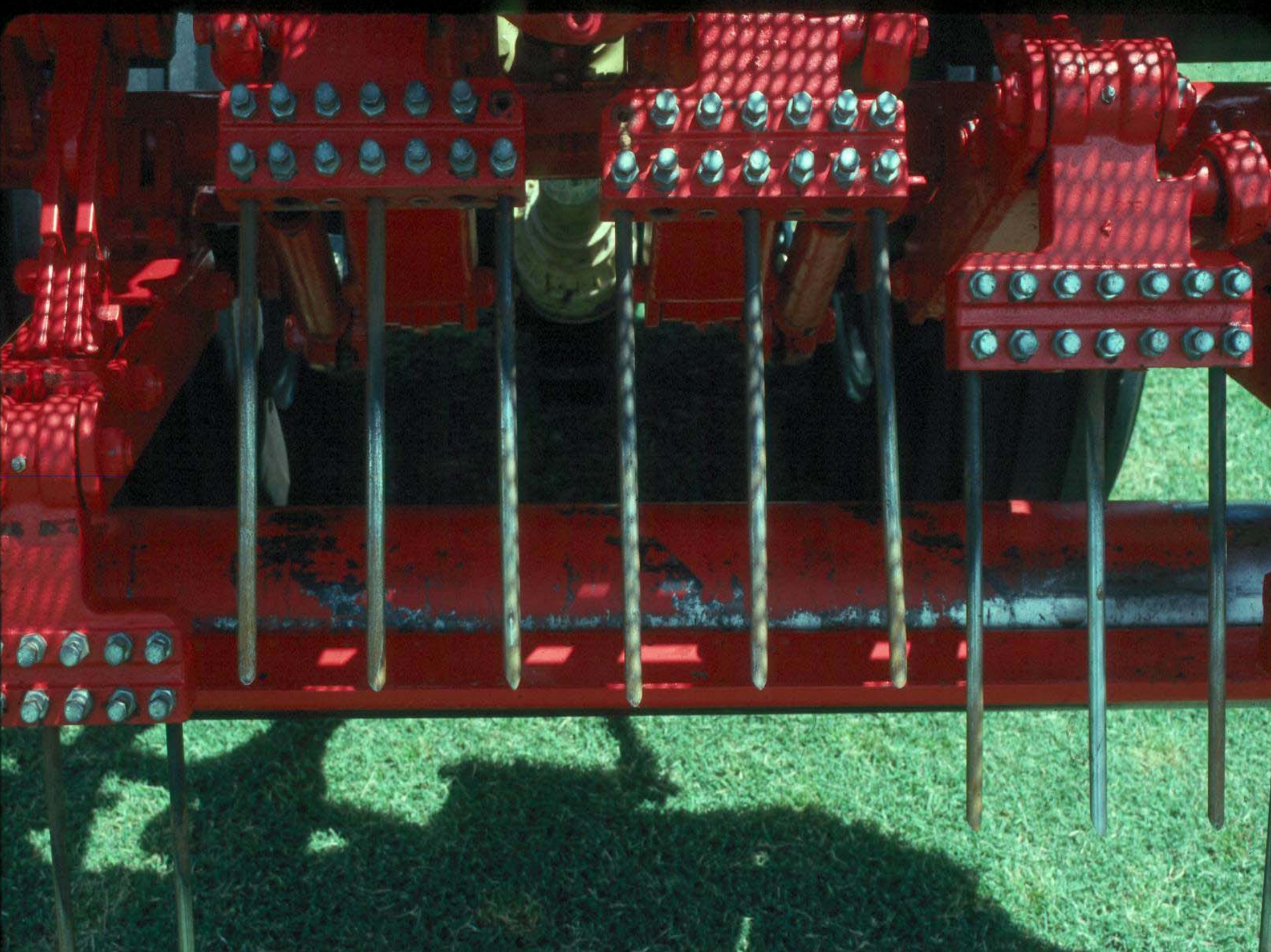
# Aerification of Sports Fields

- ☐ Soil compaction major problem for sports fields

# Problems Associated with Compaction

- Reduced oxygen availability
- Build up of toxic gases
- Reduced water movement
- Reduced nutrient uptake
- Increased root rot problems
- Increase in player injury





# Irrigation Auditing

- Site inspection

- Performance testing

- Irrigation scheduling





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GO BIG RED STARS WE WANT TV BAD

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# Performance Testing

- ▣ Precipitation rate  
(inches/hour)

- ▣ Distribution uniformity  
(in percent)

# Developing Irrigation Schedule

- ▣ Precipitation rate
- ▣ Distribution uniformity
- ▣ PET values
- ▣ Soil type
- ▣ Effective root depth

# Irrigation Audit Results

Zone	Precipitation Rate	Distribution Uniformity
1	0.72	67
2	0.29	44
3	0.36	71
4	0.39	56
5	0.45	32
6	0.51	59

# Irrigation Schedule

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	3	20	0	8	20	25	25	13	8	2	0
2	0	7	49	0	21	49	63	61	33	20	4	0
3	0	6	39	0	16	39	50	49	26	16	3	0
4	0	5	36	0	15	36	46	45	24	14	3	0
5	0	5	32	0	13	32	41	40	21	13	2	0
6	0	4	28	0	12	28	36	35	19	11	2	0
<b>Irrigations per week</b>	0	1	1	0	1	2	2	2	1	1	1	0





Real learning for real li

# El Paso SAFE Program Experience



# Why SAFE for El Paso?

- **WATER issues....**
  - major issue identified in 1999 TCFF
  - Pesticides found in wastewater treatment systems
- **Turfgrass management recommendations for local conditions.....**
  - Consultations with landscape & athletic field staff
- **Desert valley soils highly heterogeneous.....**
  - Soils conference output
- **Low quality athletic fields....**
  - School/parks administrators comments



# SAFE addresses identified needs

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- A program designed to develop a turfgrass management protocol for each specific field based on a comprehensive evaluation and monitoring of the field's resources and use.
- Focus:
  - Audit of Athletic Fields
  - Irrigation Audit (water issue)

# Building Partnerships with SAFE

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- Independent School Districts
- Parks & Recreation Dept.
- UT El Paso
- El Paso Water Utilities
- SW Irrigation Association

# SAFE participants

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- **1999**
  - 1 High School
- **2000**
  - 4 High Schools from 2 ISD's
- **2001**
  - 6 High Schools from 2 ISD's
  - UTEP
- **2002**
  - 13 High Schools from 4 ISD's
  - UTEP (2 fields)
  - Parks Dept. (1 field)
- **2003**
  - 20 participants

# El Paso SAFE Program Benefits

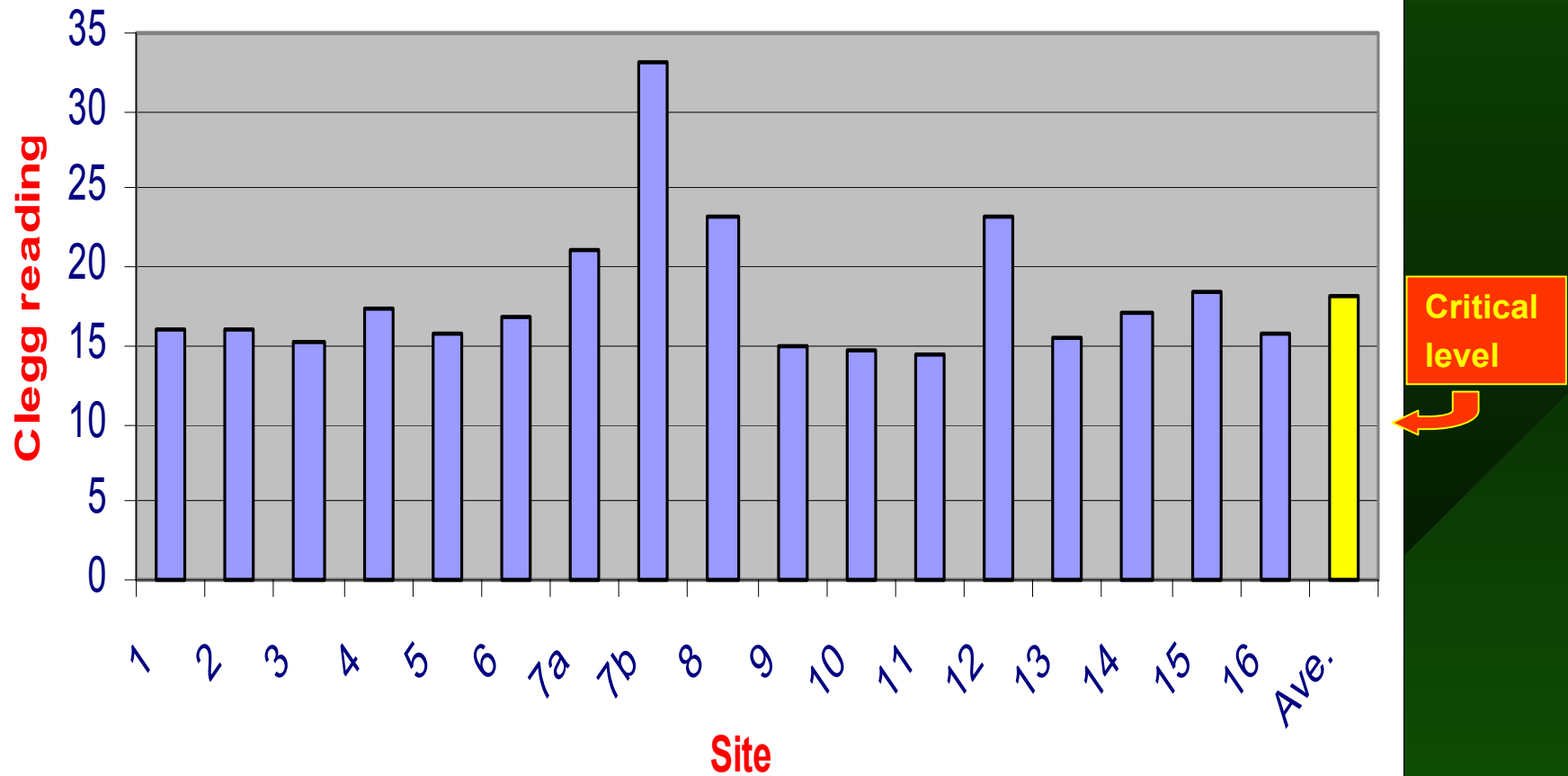
- Result-demo site
- Training opportunities
- Marketing



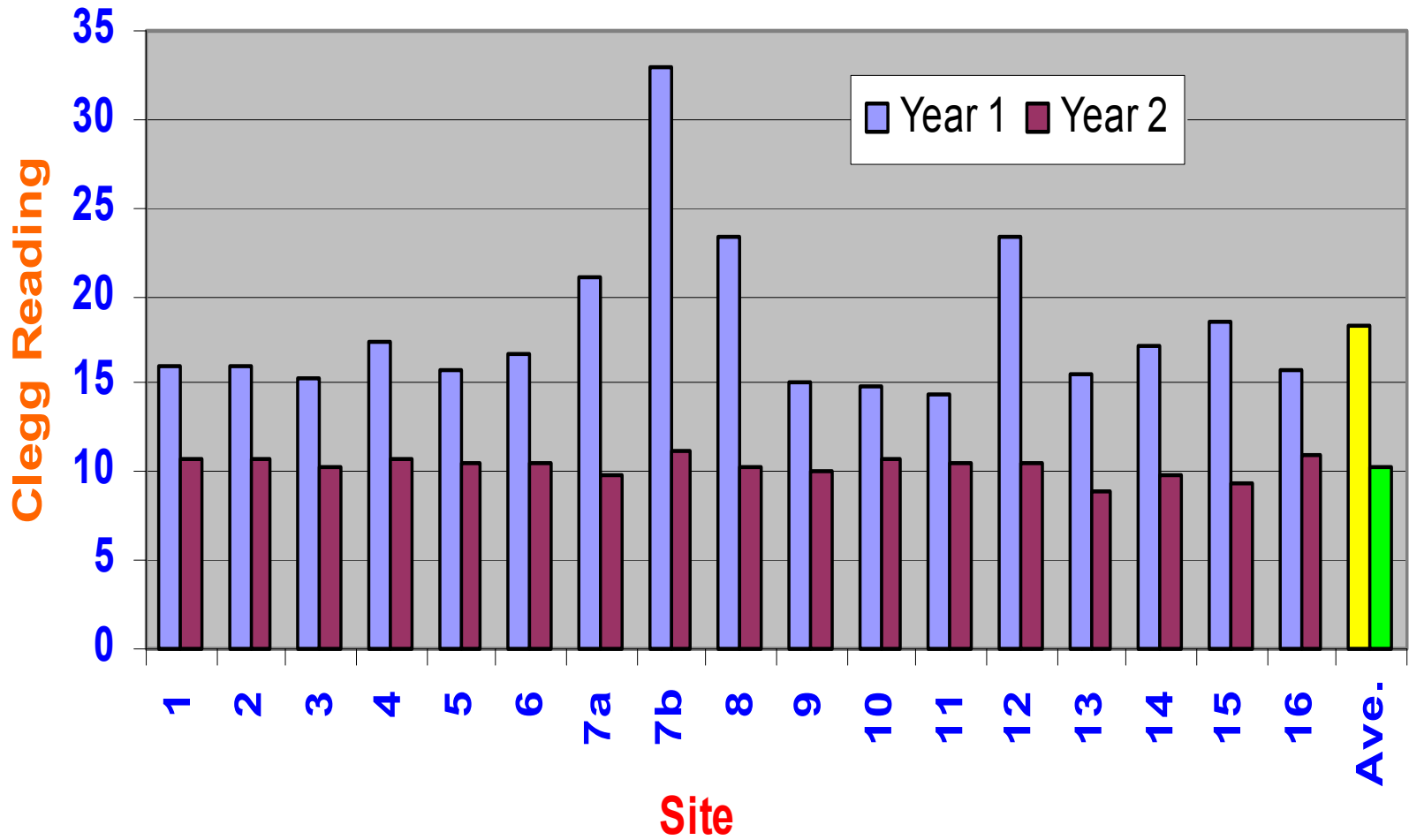
# Aeration



# Soil compaction Readings

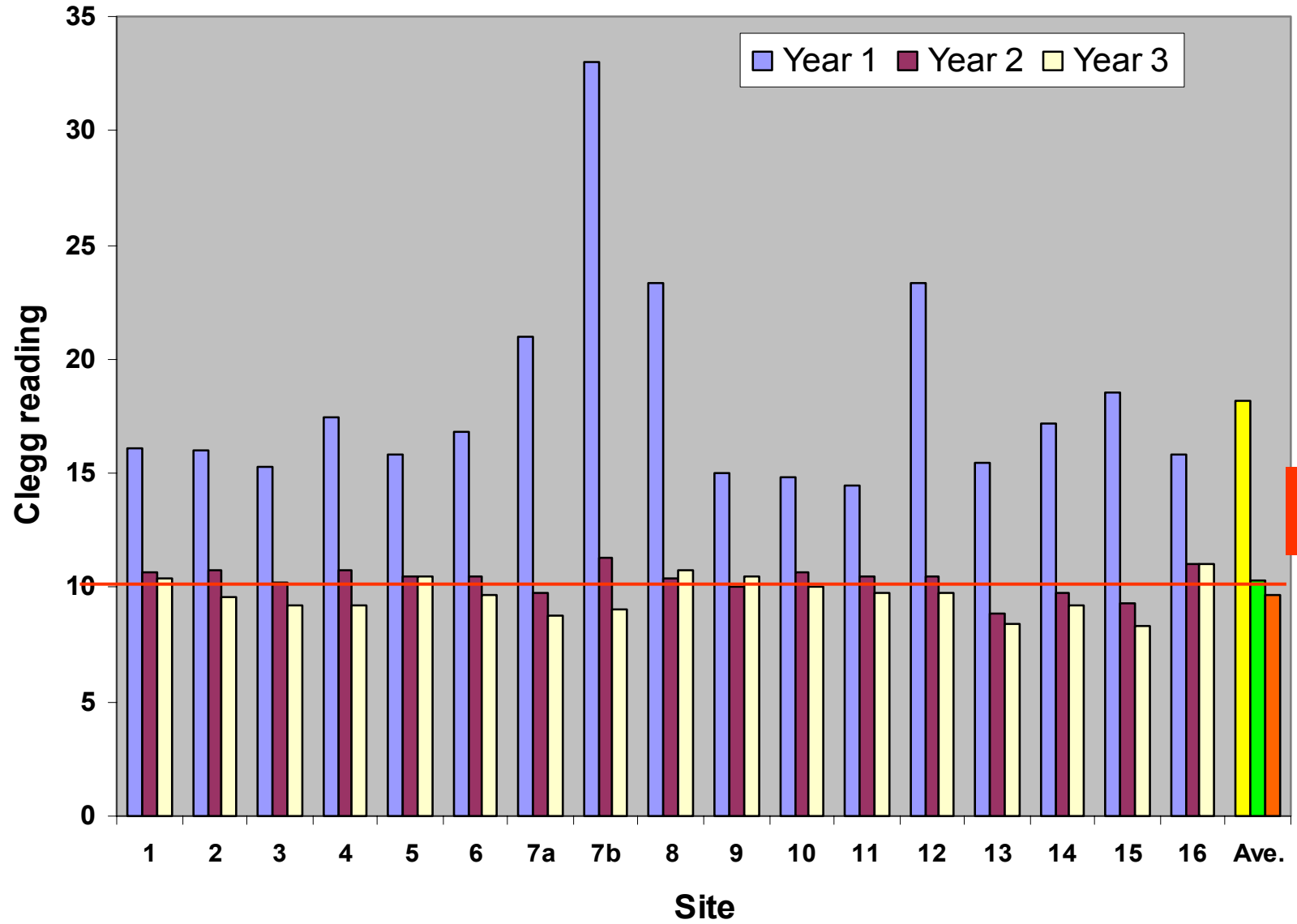


# Change in soil compaction



Critical level

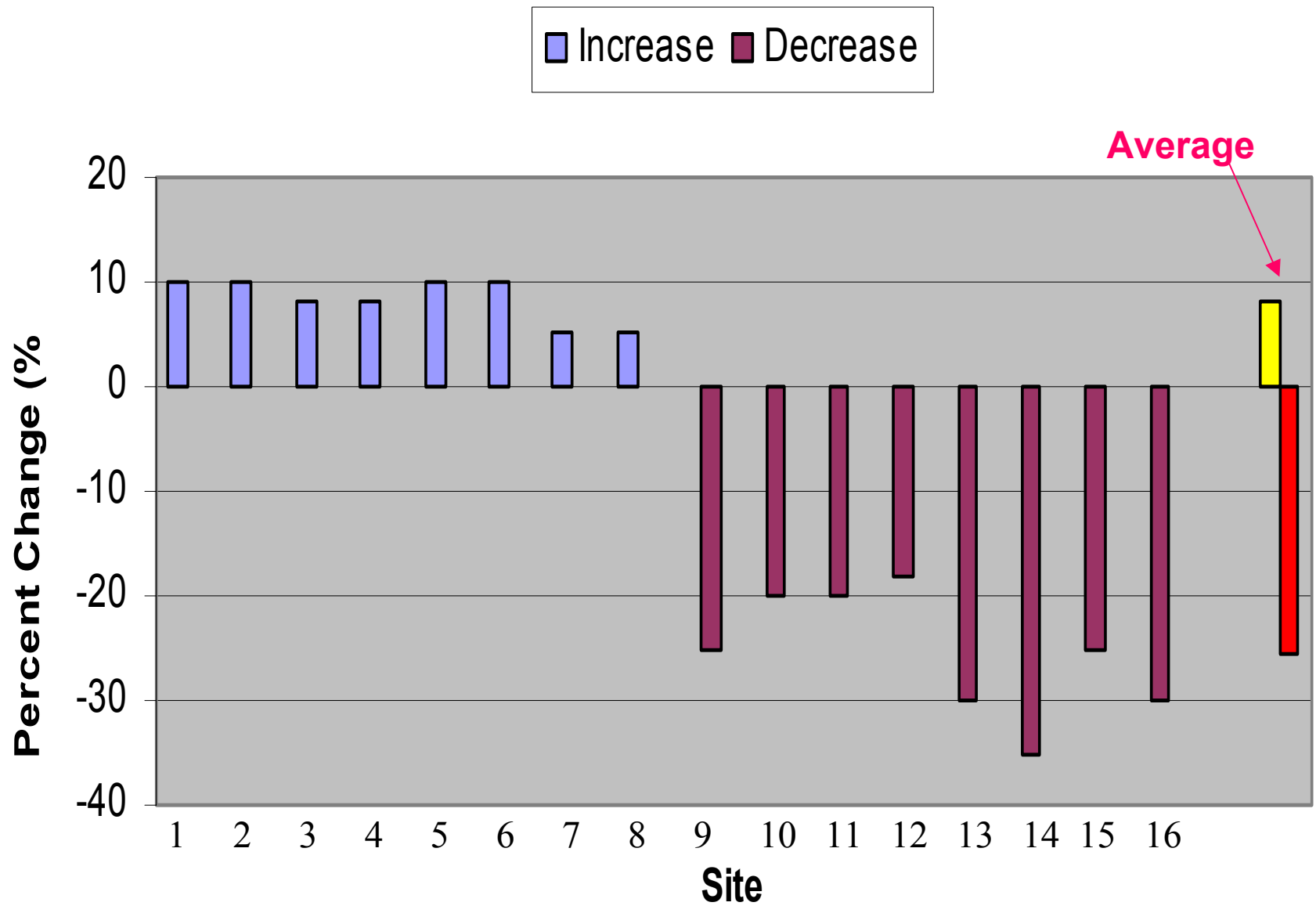
# Change in soil compaction



Critical level



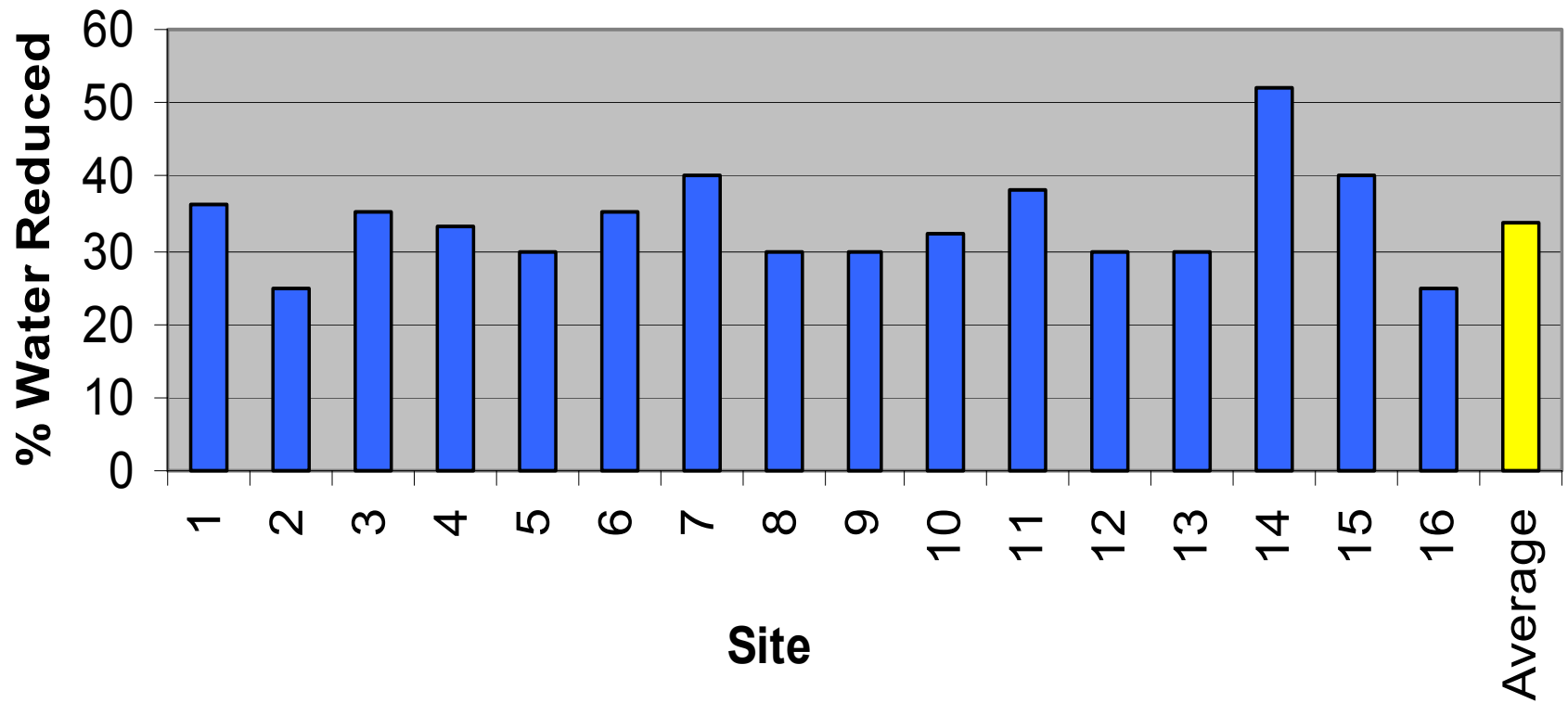
# Change in amount of Fertilizers used



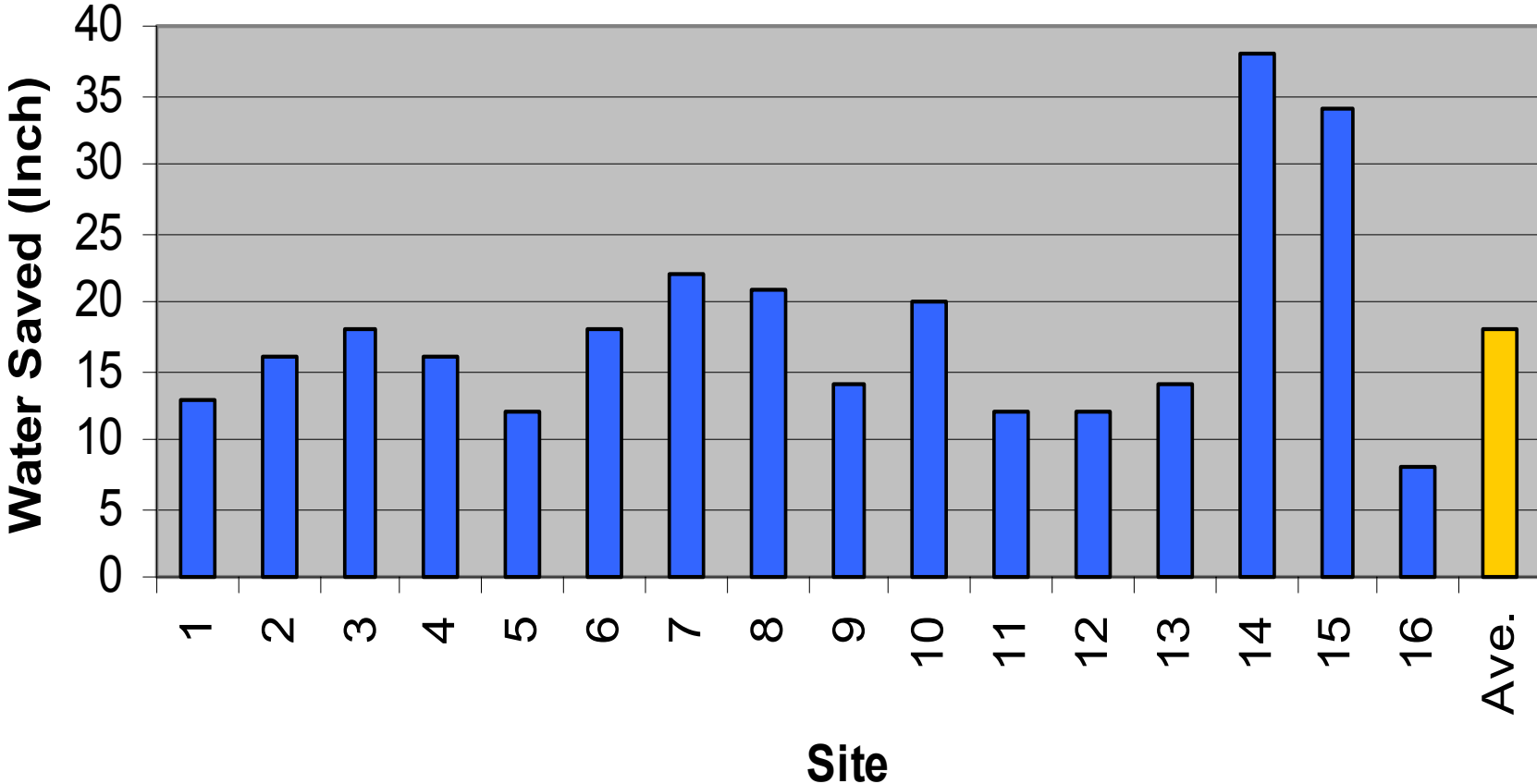
# Irrigation audit



# Reduction in water used after irrigation audit !



# Amount water saved !!!



# Pesticide Education Program

- Response to Diazinon detection in wastewater treatment systems
  - IPM training programs
  - Pesticide result demo for alternative pesticides
- Result : No failures in wastewater monitoring

# Expanded Educational programs

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## Training Opportunities (off and on-site)

- **Landscape Irrigation Audit**
  - 25 certified Landscape Irrigation Auditors
- **Soils and fertilizers**
  - Fertilizer use based on soil analysis
- **Turfgrass Care Workshops- (3 per year)**
  - Spring, Summer, Fall
- **Integrated Pest management**
  - Pesticide applicators training, sprayer calibration, weeds id., IPM approaches

# Field days.... Sharing experiences



- **On-site field visits/training**
  - **Information exchange vehicle**
  - **IPM training**
- **Stand alone Demo**
- **Research plot**

# Extension marketing opportunity

- **2002**
  - **16 fields participating**



## 2002 report (SAFE fields)

- **400 + games played**
- **280,000 ++ attendees**



# What participants get in the end

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- Efficient use of resources
- High quality playing field
- Safer, good playing conditions
- Long term management protocol
- School / community pride

# SAFE Program in Urban Extension

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## Program relevance and impact

- ***Community identified issue relevance (TCFF)***
  - *Water, Environmental stewardship, Youth (player safety)*
- ***Diverse audience/areas***
  - *Opportunity for bi-lingual program presentations*
- ***Program evaluation***
  - *Impact, quantified data*

# SAFE Program in Urban Extension

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## Interpretation & Marketing

- ***Effective partnership building / Networking***
  - *Schools, County gov't., community, industry, etc.*
- ***High visibility program***
  - *Extension marketing & interpretation potential*
  - *Opportunity for cross marketing Extension programs to non-traditional clientele*
- ***Cooperative spirit & Quality of Life***
  - *School and Community pride*
  - *volunteer involvement*

# Partnership recognition and Program Interpretation



# The sum of it all.....

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## Safer playing conditions with quality fields

.....“Our irrigation bill is much smaller, our coaches, players and groundskeeper are happy with our fields, and our fields are healthier”

.....“Our fields were rated by visiting teams as having high quality turfgrass throughout the season”

.....“Our trainers say the number of player injuries have declined by about 40% in SAFE fields”.

***Pat O’Neal***

*Athletic Director, Ysleta ISD*

# **S.A.F.E.**

**(Sports Athletic Field Education)**

.....an innovative model for  
Urban Ag. and NR Extension

• **Raymond Bader, *CEA-NR, El Paso County***

• **James McAfee, *Extension Turfgrass Specialist, Dallas Res. & Ext. Center***



Real learning for  
real life