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
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
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

<table>
<thead>
<tr>
<th>Zone</th>
<th>Precipitation Rate</th>
<th>Distribution Uniformity</th>
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## Irrigation Schedule

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<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
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<th>Dec</th>
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</table>

Irrigations per week:
- Irrigations per week: 0 1 1 1 0 1 2 2 2 1 1 1 0
Real learning for real life
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

- 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

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

- **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

Critical level
Change in soil compaction

Clegg Reading

Site

Year 1
Year 2

Critical level
Change in soil compaction

[Bar chart showing change in soil compaction across different sites and years. Each site is represented by a vertical bar, with colors indicating different years: Year 1 (blue), Year 2 (red), and Year 3 (yellow). The critical level is marked with a red line.]
Change in amount of Fertilizers used

<table>
<thead>
<tr>
<th>Site</th>
<th>Percent Change (%)</th>
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<tr>
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<tr>
<td>2</td>
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<td>15</td>
<td>Decrease</td>
</tr>
<tr>
<td>16</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Average: Increase
Reduction in water used after irrigation audit!
Amount water saved !!!

![Bar chart showing water saved at different sites.](image)
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

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

• Efficient use of resources
• High quality playing field
• Safer, good playing conditions
• Long term management protocol
• School / community pride
SAFE Program in Urban Extension

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

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.....

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.
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