DEALING WITH WEEDS

• weeds are the problem, herbicides are one approach to dealing with the problem.

• why are they there?

• weeds fill a void in the system

• weeds respond to the environment we create

• in many ways, we create our own weed problems

• Weeds can adapt to environments and practices because of the diversity within weed populations
  – emergence characteristics
  – life cycles
  – growth patterns
– response to soil properties

– seed persistence

– response to control practices

• weed populations move toward species that mimic the crop and thrive under the soil and environmental conditions of the site.

  – these responses occur at a range of scales

Summary

• Weed populations are very diverse and can adapt to many situations.
• The primary goal of weedy species is survival.

• Weeds take advantage of the resources and conditions present in the system.

• If we consider weeds in isolation of other elements of turf management, we will not move beyond temporary solutions.
WEED MANAGEMENT

- control and management are not the same thing

- weeds are usually a symptom of a weakened turf, not the cause

- remember, there is usually a reason for weed encroachment

- reasons for weak turf

- if factors causing the decline of the turf are not corrected, any control practice will provide only a temporary solution

DEVELOPING WEED MANAGEMENT PROGRAMS

- integrative process

- a weed management system includes:
• A systems approach to weed management may not reduce or eliminate herbicide use.

Turfgrass Systems and Weeds
• Continuous soil cover
• Stable environment
• Regular mowing
• Turf use patterns/function
• Regular human presence
• Proximity to water bodies

Cultural Practices/Cultural Control
• Basic premise: when the turf is properly managed, it is very competitive with weeds.
CULTURAL WEED CONTROL PRACTICES

I. Prevention: the most basic method of control
  • use “clean” seed and sod
  • weed identification is a critical component

II. Mowing: friend and foe
  • many species cannot tolerate mowing
  • mowing is also a major cause of weed problems
  • weed species that tolerate mowing are best adapted to turf
III. Fertilization

- fertilizer doesn’t know the difference between turf and weeds
- fertilize at times that maximize use by the turf and minimize the availability to weeds
- use proper analysis fertilizer to meet needs of the turf

IV. Irrigation

- establishment versus mature turf
- water uniformly to avoid wet and/or dry areas that will weaken turf
V. Drainage

- poor drainage results in uneven soil moisture

VI. Cultivation/Aeration

- primary effect is on turf growth by reducing soil compaction
- aeration can encourage weeds if the turf canopy is opened and weed seeds are brought to the surface

WEEDS AS INDICATORS OF SOIL CONDITIONS

<table>
<thead>
<tr>
<th>Soil condition</th>
<th>Indicator weeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low pH</td>
<td>Red sorrel, broomsedge</td>
</tr>
<tr>
<td>Compacted soil</td>
<td>Plectritis knautiana, annual bluegrass</td>
</tr>
<tr>
<td>Low soil N</td>
<td>Eragrostis sp., speedwell, chicory</td>
</tr>
<tr>
<td>High soil N</td>
<td>Moss, annual bluegrass, ryegrass</td>
</tr>
<tr>
<td>Surface moisture</td>
<td>Algae, moss</td>
</tr>
<tr>
<td>Poor drainage</td>
<td>Sedge, annual bluegrass, barnyardgrass, reeds</td>
</tr>
<tr>
<td>High pH</td>
<td>Plantain</td>
</tr>
<tr>
<td>Low mowing</td>
<td>Algae, annual bluegrass, chickweeds</td>
</tr>
<tr>
<td>High or infrequent mowing</td>
<td>Bull thistle, chicory, clover</td>
</tr>
</tbody>
</table>
VII. Mechanical Control

- pulling, cutting, and digging

VIII. Spot Treatment

- target small areas of weeds

WEED MANAGEMENT AND TURF CULTURAL PRACTICES SUMMARY

- we have covered potential pieces of a weed management system

- weed management encourages a shift away from reliance on control of existing weed problems

- weed management emphasizes integration of techniques to anticipate and manage problems rather than reacting to them after they are present