Managing and Preventing Weeds and Other Outdoor Pests

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Which are Your Top 3 Most Problematic Pests Outdoors

1. Turf Weeds
2. Weeds in hardscapes
3. Turf insects (grubs, chinch bugs)
4. Turf diseases
5. Stinging and biting insects (mosquitoes, bees/wasps) & ticks
6. Animals and birds (skunks, snakes, mice, crows etc.)
7. Other
8. None
Pests Come in All Forms!

- Vole Damage
- Poisonous Plants
- Turf Weeds
- Disease Carriers
- Grubs and Chinch Bugs
- Stinging Insects
What Weed Management Methods are Used at Your School(s)?

1. String Trimmers
2. Flamers/heat devices
3. Herbicides
4. Nothing
Getting Started with IPM

- Identify Responsibilities
- Map Grounds
- Assess Field Condition
- Inventory & Assess Equipment
- Review Maintenance Records
  - Soil Test Results (pH and fertility)
  - Fertilizers (what, where, when, amounts)
  - Pesticide Applications (what, where, when, rates)
  - Aeration
  - Seeding
  - Irrigation
  - Renovation, etc
Best Management Practices (BMP) for School Grounds and Fields

Adopted by BPC 2/24/2012

Best Management Practices for Athletic Fields & School Grounds

#1 Goal—Reduce human pesticide exposure!
- Minimize pesticide use
- Maintain healthy plants
- Choose pest-resistant plant varieties
- Apply spot treatments whenever possible
- Choose products proven to be effective at low application rates
- Choose products that leave little or no residue
- Apply when school is not in session or over extended vacations
- Keep people off treated areas for as long as possible
- Check product label for maximum run-off times

Other Key Points for Maintaining Quality Grasses and Reducing Risks
- Maintain good communication between staff and consultants involved in grounds maintenance and the PPM coordinator
- Emphasize practices that improve turf quality and help minimize need for pesticides
- Identify sites specifically and restrict use to those threshold levels before instituting any treatments
- Make sure all pest control products (weed, insect, and plant disease controls) are labeled for use on school grounds and approved by licensed commercial pesticide applicators
- Confirm that all contracts for grounds maintenance services follow these BMPs and the practices shown on the appropriate side of this brochure
- Develop a maintenance schedule for the most commonly managed areas so key steps aren’t missed
- Keep detailed records of soil tests, aeration, seedings, top dressings, amendments, and pesticides applied for at least 10 years

Introductions
In 2011, the Maine Legislature directed the Board of Pesticides Control to evaluate the use of pesticides on school grounds and develop Best Management Practices (BMPs) for pesticide use with a goal of maintaining human exposure to pesticides. This brochure explains how schools should implement these BMPs. In addition, these recommendations should also help schools keep maintenance costs down while improving the safety and appearance of school grounds.

Getting Started
Schools should identify the employees who are involved in school grounds maintenance decisions, including the PPM coordinator, the maintenance director, and maintenance staff. These employees should be included in management decisions involving pesticides and be consistent with state law and all notification requirements will be followed.

This ground maintenance decision makers should assign a Grounds Maintenance Priority Level to all school grounds. The Grounds Maintenance Priority Level is assigned by the PPM coordinator and is based on the number of employees who will be affected by the decision. The following tables summarize the BMPs for each level of maintenance:

Level Specific BMPs for Athletic Fields and School Grounds

<table>
<thead>
<tr>
<th>Level 1 - Highest Care</th>
<th>Level 2 - High Care</th>
<th>Level 3 - Moderate Care</th>
<th>Level 4 - Lowest Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>High impact athletic game fields, e.g. football, soccer, field hockey fields</td>
<td>Low impact athletic game fields, e.g. baseball, softball</td>
<td>High visibility lawns, Multiple use areas</td>
<td>Utility areas, sports fields, Natural areas</td>
</tr>
</tbody>
</table>

Field Use Restrictions
- Whenever possible, field use should be restricted to reduce exposure and surface water is prevented.
- If field use occurs, move goal areas regularly

Soil Test
- All establishment and before renovation on at least 3 years when it needs to be adjusted
- Every 3–5 years otherwise
- Soil test should determine:
  - Nutrient levels
  - pH
  - Level of composition
  - Soil texture and structure (Level 1 only)
  - Percent organic matter
  - Thatch depth
  - Rooting depth

Irrigation for Maintenance of Established Turf
- Supplement rainfall when needed to provide a total of 1” of water per week when grass is actively growing (April – November)
- Water turf early in the morning
- As needed to promote active turf growth and prevent summer dormancy
- Water turf early in the morning

Aeration
- 2-3 times at a depth of 3-12 inches using a combination of hollow core, solid core, or other aeration
- As needed to promote active turf growth and prevent summer dormancy
- Aerate as needed

www.maine.gov/schoolipm
Assign Maintenance Priority Levels

- **Level 1—Highest care**  
  - some varsity playing fields
- **Level 2—High care**  
  - practice fields  
  - multipurpose fields  
  - May include varsity fields or high visibility lawn areas
Grounds Maintenance Priority Levels

- **Level 3—Moderate care**
  - playgrounds,
  - low-use areas,
  - common areas
  - May include practice fields & lawns depending on school

- **Level 4—Lowest care**
  - most lawn areas,
  - natural areas,
  - fence lines,
  - trails
  - property edges, slopes, utility areas, ditches
Assess Condition of Properties

* Turf Quality Assessment Checklists: Soil Tests (pH, fertility, soil compaction) (UMaine Soil Testing Lab or independent lab)

* Mark problem areas (weeds, insect damage, bare soil, etc) on maps
Develop a Comprehensive Turf Management Plan

- Write it! Don’t wing it!

- Develop a maintenance schedule for each field/area

- Monitor (systematically look for) and identify pests. Confirm pest exceeds threshold levels before authorizing pesticide treatment.

- Keep detailed records of soil tests, aeration, seeding, top dressing, nutrients and pesticides applied for at least two years

- Write BMPs into service contracts and verify that service providers follow them
Grounds maintenance contracts should clearly establish:

- The goals of the IPM program
- Schedule of services provided & how they are implemented
- Posting and notification responsibilities
- No pesticide (herbicide, insecticide, fungicide or other pesticide) without written prior authorization by IPM coordinator
- The population levels of specific pests that can be tolerated without treatment
Grounds maintenance contracts should clearly establish:

* Appropriate least-risk procedures to correct pest problems
* The restrictions on pesticide use: types of applications, timing of applications, restricted locations, materials that can be used
* The pest management actions that are the responsibility of the school district
* Who will do the posted notices
Soil Fertility & pH

- Test soil every 1-3 yrs
- Fertilize (slow release N) according to test results
- Amend soil to adjust pH if needed
Aeration

Aerate sports fields 2-5x/year

Moderate Care Fields: 1x/2yrs

Avoid spring aeration if weed seeding is a threat
Supplement rainfall to provide 1” water/week during growing season
Mowing

- Mow at highest cut allowed for the sport; (3” - 4”) for lawns.
- Cut no more than 1/3 of grass height at once.
- Keep mower blades sharp

As mowing height decreases
Depth of rooting decreases
and maintenance increases
Overseeding

- Aggressively overseed sports fields
- Repair bare spots immediately with good quality perennial ryegrass
- Promotes thick turf
- Prevents weed growth
Restrict Field Use Whenever Possible

- No use when soils are saturated and surface water is present
- Move goal areas regularly
Scout for weeds, insects, turf diseases, bare spots regularly. Create a field map to show where problems are found.

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<th>Level 1 – Highest Care</th>
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<td>• Depending on weed species present, accept up to 15 - 20% weeds</td>
<td>• Depending on weed species present, accept up to 20 - 30% weeds</td>
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</table>
Weed Control

- **Baseball infields**: periodic shallow cultivation with nail drag, rotary hoe or power rake.
- **Fencelines and Hardscapes**: hand weeding, string trimmers and ‘mow strips’.
- **Overseeding** regularly keeps turf dense to prevent weeds.
Monitoring & Managing Grubs

- Turn over 1x1 ft patches of turf (or use golf course cup cutter = 1/10 sq. ft.)
- Identify & count grubs
- Treatment thresholds: adjust published thresholds according to your situation
- Insecticide treatments: Timing is most critical. Spot treat early morning or evening. Follow recommendations for target species. Follow label exactly.
- Biological Control: Beneficial nematodes. Handle as living organisms & water in. Must apply on cloudy day or in the dark. Follow published guidelines.
Action Thresholds for non-irrigated turf (grubs/sq.ft.) thresholds may be increased 30% with irrigation

- European chafer: 4 to 6/sq.ft.
- Japanese beetle: 6 to 12/sq.ft.
- Oriental beetle: 6 to 12/sq.ft.
- Asiatic garden beetle: 10 to 20/sq.ft.
Pest Identification is crucial

White grub rastral patterns

Japanese beetle  European chafer  May/June beetle  Asiatic garden beetle
BMPs for athletic fields and school grounds

- Apply spot treatments whenever possible
- Choose products that leave little or no residue on surfaces students may touch
Which IPM Practices Need Improvement at Your School(s)?

1. **Communication** (between contractor, IPM Coordinator, athletic staff, community, etc)
2. **Record-Keeping**
3. **Soil Testing**
4. **Aeration**
5. **Overseeding**
6. **Insect and Weed ID & Monitoring**
7. **Spot treating** (vs whole field pesticide application)
Resources

• School Turf BMPs
  • Maine School IPM Program
    www.maine.gov/schoolipm
  • Yardscaping.org

• UMASS Turfgrass Program
  • http://extension.umass.edu/turf/
  • Integrated Pest Management Protocols for Turf on School Properties and Sports Fields
  • Lawn&Landscape BMPs

• Lawn care guidelines, videos, fact sheets
  • http://growinggreenlawns.org