

Integrated Pest Management (IPM) Plan

Athletic Fields

City of Pensacola

Statement of Purpose

The City of Pensacola Parks and Recreation Department recognizes the potentially serious risks inherent in using chemical pesticides on athletic facilities – especially in an environmentally sensitive areas. We are committed to implementing a comprehensive Integrated Pest Management Plan (IPM Plan) for all athletic fields in the City. The City of Pensacola IPM Plan is defined as the coordinated use of physical, biological and cultural controls, and in the face of any public health threat or substantial property damage, the use of least-toxic pest control chemicals.

Objectives

The objectives of the IPM Plan for athletic fields in the City of Pensacola are to:

1. Maintain a safe and sustainable environment;
2. Protect human health and the surrounding environment by employing a range of preventative strategies and using least-toxic products for pest control and eradication.
3. Protect human health and the surrounding environment by controlling or eliminating pests that pose an imminent threat to public health and safety;
4. Reduce and/or eliminate human exposure to pesticides through minimization of the quantity and toxicity of chemicals used for pest management.
5. Establish clear criteria for acceptable circumstances in which using a pesticide other than a least-toxic pesticide is necessary; toxic pesticides shall only be used when there is a threat to public health and safety, or to prevent economic or environmental damage, and only after other alternatives have been implemented and are shown to be ineffective.
6. Reduce and/or prevent pest damage to athletic playing areas;
7. Reduce or eliminate environmental pollution and degradation;
8. Maintain economically sound practices for pest management on athletic fields
9. Enhance the overall quality of play for those who use city athletic fields.

IPM Response Plan

One of the characteristics of an IPM Plan is that it facilitates a streamlined decision making process approach for any pest problem in any location. This process involves monitoring of pest populations, establishment of tolerance thresholds, modifications of habitats (to eliminate sources of food, water and harborage and entry), utilization of least-toxic controls, keeping records and evaluation of performance on an ongoing basis. It is the responsibility of the Ball Crew Operations Supervisor and Ball Crew personnel to ensure that any maintenance and pest control services provided by Parks and Recreation staff comply with the best practices listed in this IPM plan to minimize the use of fertilizers, pesticides and herbicides. A pesticide is defined as any insecticide, rodenticide, herbicide, algicide, disinfectant or other chemical utilized to kill or repel a pest. Any use of chemicals will be in compliance with federal and state laws.

Detection and Monitoring

The IPM approach to turf management begins with a monitoring program. Monitoring entails making regular inspections of the turf to gather and record site-specific information on which to base pest control decisions.

- identify the pest(s)
- apply preventive methods to reduce the occurrence of pest problems
- monitor pest population
- identify any natural enemies of the pest(s)
- determine if any treatment is needed
- determine where, when, and what kind of treatments is needed
- evaluate and fine-tune treatments as the pest management program continues over the seasons

A sample evaluation form is provided below. The facilitate implementation and enhancement of the IPM Plan in the future, completed forms shall be retained in **Appendix A** of this IPM Plan.

Pest Name:	Actions take to control the problem						
Pest Location:							
This pest is a (circle all that apply)	Apply Preventative Methods	Monitor Pest Population	Identify Natural Enemies of the Pest	Determine Injury and Action Level	Monitor for Pest	Treat the Problem using IPM Tiered Procedures	Follow Up
Heath Concern Safety Issue Nuisance Aesthetic Concern Other:							

Tolerance Threshold

Before any course of action can be determined, it is first important to determine the injury level. The injury level is the level of damage or the level of pest population that causes unacceptable injury. Once the injury level has been determined, an action level must be set. The injury level will always be higher than the action level, meaning that action should occur before the situation progresses the point of unacceptable injury. The following definitions and thresholds have been adopted as part of this IPM Plan:

Definitions:

Aesthetic Injury applies mainly to the damage of plants. This is injury that affects the appearance without affecting the health of the plant.

Economic Injury refers to pest damage that causes monetary loss.

Human Health Injury relates to human health problems caused by pests.

Emergency – A pest outbreak that poses an immediate threat to public health or will cause significant economic or environmental damage.

Tiered Materials – Pesticide classification system based on hazard potential. Products are evaluated against comprehensive list of hazard criteria including carcinogenicity, reproductive toxicity, endocrine disruption, acute toxicity, hazard to birds/fish/bees/wildlife, persistence, and soil mobility, and are placed within the Tier structure based on the evaluation results.

Tier 1: Highest concern

Tier 2: Moderate concern

Tier 3: Lowest concern

Tier 4: Insufficient information available to assign to above tiers

Least-toxic pesticide – The term “least toxic” refers to pesticides that have low or no acute or chronic toxicity to humans, affect a narrow range of species and are formulated to be applied in a manner that limits or eliminates exposure of humans and other non-target organisms. Fortunately, there are an increasing number of pesticides that fit within this least toxic definition. Examples include products formulated as baits, pastes or gels that do not volatilize in the air and that utilize very small amounts of the active ingredient pesticide and microbial pesticides formulated from fungi, bacteria or viruses that are toxic only to specific pest species but harmless to humans.

Any pesticide product that meets the Tier 3 hazard criteria is low hazard, and considered a least-toxic pesticide. Tier 3 products are the next line of defense against pests after preventative measures are exhausted.

- To qualify as a Tier 3 material, all of the following statements must be true:
- Product contains no known, likely, or probable carcinogens
- Product contains no reproductive toxicants (CA Prop 65 list)
- Product contains no ingredients listed by CA DTSC as known, probable, or suspect endocrine disrupters
- Active ingredients has soil half-life of thirty days or less
- Product is labeled as not toxic to fish, birds, bees, wildlife, or domestic animals

Pesticide – Any substance, or mixture of substances, used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, which may be detrimental to vegetation, humans, or animals.

Thresholds:

Weeds - The goal for the athletic field turf is not to eliminate all weeds; it is to keep weed numbers low enough to prevent significant visual damage. Lawns are a very dynamic ecosystem, and even under optimum grass-growing conditions some weeds will become established. Even height smooth turf is required on athletic fields. Treatment for weeds will be considered necessary if weed growth causes the lawn surface to be too uneven for field sports and thus endangers athletes using the respective field.

Diseases - Lawn diseases, if encountered, will be managed quickly after discovery to minimize the spread of disease.

Insects - Even height smooth turf is required on field areas. The presence of an infestation will be verified prior to treatment. Treatment for insect infestation will be considered necessary when damage is noticeable, unsightly and/or impacting play on the athletic field and potentially endangering athletes.

Preventative Measures and Treatment

The Parks and Recreation Department will follow the recommendations for management of weeds, diseases, insects and other lawn issues in the Green Industry Best Management Practices guidelines along with consultation with a professional pest and lawn maintenance company. The following management techniques will be employed, with preference given to using the least-toxic methods first.

Habitat Modification. Pests need food, water and shelter to survive. If the pest manager can eliminate or reduce the resources pests need to flourish, the environment will support fewer pests. Examples of habitat modification include: design or redesign of structures and landscape plantings; improved sanitation; eliminating water sources for pests; and eliminating the pest habitat.

Physical Controls: Methods of physical control (or direct removal of pests from an environment) include trapping and removing pests by hand. Physical measures also include the use of buffer zones adjacent to environmentally sensitive areas surrounding athletic fields. Buffer zones will receive no pesticide or fertilizer applications. The following physical controls will be utilized:

- Weeds: Mowing, pulling or weed-eating will be used to remove rank growth before weeds have flowered and set to seed.
- Diseases: Physical removal of diseased turf may be possible if the disease is discovered early enough.
- Insects: When possible, pest insects will be physically eradicated.
- Other lawn problems: Shade stress will be managed by pruning tree branches to minimize shade whenever appropriate. Stress from compaction will be minimized in the following ways:
 - Use of sidewalks in pedestrian pathways, where possible as it relates to athletic field areas.
 - Physical barriers or signs to prevent foot traffic.

Cultural Controls: Consistent use of the following cultural lawn care practices will provide high quality turf and successfully limit weed, disease, insect and other lawn problems. The presence of weeds and other pests can often be correlated to stressful lawn maintenance practices. The following cultural methods will be utilized:

- Irrigation: It is difficult to maintain an athletic field without periodic irrigation, especially in a relatively hot climate as that of Pensacola. An irrigation system will be utilized for the turf areas of athletic fields. Irrigation will be managed to supplement rainfall. Frequency

and duration will depend on environmental factors. The best time to irrigate is just before wilt occurs. Enough water needs to be applied to soak the soil to a depth of at least 6 to 8 inches. This will likely mean applying approximately 1 inch of water per week during the summer before sunrise or after sunset to reduce water loss from evaporation. If irrigation is necessary, it will generally be utilized 24 to 48 hours before a major field use to reduce soil compaction. Irrigation will be closely monitored and scheduled by staff to prevent over and under watering and help conserve water.

- **Mowing:** Proper mowing promotes deep rooting and good shoot density, desirable mat, and uniform growth. Regular mowing at the right height with properly-maintained equipment will be the goal. Mowing height of the turf will depend on the type of turf used on athletic fields. For Bermuda grasses a mowing height, 1½ to 2 inches is preferred. The first mowing in the spring should be low by as much as one-half the desired final height. This helps increase turf density and allows the cutting height to be raised during the summer if scalping occurs. Turf should be mowed often enough so that no more than one-third of the leaf surface is removed at a mowing. Generally, this means the field should be cut twice a week during the summer. Higher mowing heights do not need as frequent mowing but result in lower quality and weaker turf. If mowing frequency is properly adjusted, clippings may be returned without harming the turf. If excessive clumping of clippings occurs, they should be dispersed or removed. Regardless of the type of mower used, it is important to keep the blades sharp and properly adjusted.
- **Aeration:** Lawns will be aerated regularly, as needed. Aeration will occur more frequently in areas that are compacted by frequent foot traffic or athletic play. As a general rule, the spacing between aeration holes should be 2 to 3 inches. Aerate fields a minimum of two times per year. The first should be done in the spring just before fertilization and the second in mid-summer. Each aeration should involve a minimum of three passes over the playing field. If field use is heavy or the soil is compacted, aerate monthly during the growing season. After the soil cores have dried, they can be crumbled and spread over the turf by using a flexible steel drag mat or some other means. Slicing with solid blades ¼ to ½ inch wide cultivates the soil with minimum surface disruption. Units with offset tines can be quite effective in relieving soil compaction. Aerate when soil moisture is at field capacity. This generally translate to 8 to 24 hours after rainfall or irrigation or when a spoon-type aerator would remove soil cores to the surface. If moisture were higher or lower, cores would not easily move to the surface. However, some equipment, particularly solid tines or blades, are most effective when soil moisture is drier than field capacity. Aerate when the turf is actively growing and not under stress.
- **Fertilization:** Soil examination by soil test (pH) and/or professional visual analysis will be performed regularly to determine the need for fertilization. When required, fertilization will be accomplished by the use of a granular organic fertilizer. If additional fertilization is required, as demonstrated by soil test and/or professional visual analysis, 1/2 pound of nitrogen per 1000 square feet will be added no more than eight times a year, as required.
- **Over seeding:** Winter rye grass seeding may be employed, as it works with the respective athletic field schedule.

Biological Controls: Biological control tactics for weeds, insects, diseases and other lawn issues will be employed when possible. The following biological controls will be utilized:

- Weeds: There are no biological controls proposed for weeds at this time.
- Diseases: There are no biological controls proposed for diseases at this time.
- Insects: Biological control of caterpillars, such as armyworms and sod webworms, will include the use of the bacteria *Bacillus thuringiensis* (Bt). More information about Bt can be found in Grow Green's Earth-wise Guide to Caterpillars.

Least Toxic Chemical Controls. Least toxic pesticides are those with all or most of the following characteristics: they are effective against the target pest, have a low acute and chronic toxicity to mammals, biodegrade rapidly, kill a narrow range of target pests and have little or no impact on non-target organisms. These include materials such as the following:

- Pheromones and other attractants
- Insect growth regulators
- Repellents
- Desiccating dusts
- Pesticidal soaps and oils
- Some botanical pesticides

The following criteria should be used when selecting a pesticide:

- Safety
- Species specificity
- Effectiveness
- Endurance
- Speed
- Repellency
- Cost

Least toxic pesticides include:

- a) Boric acid and disodium octobrate tetrahydrate 6
- b) Silica gels
- c) Diatomaceous earth
- d) Nonvolatile insect and rodent baits in tamper resistant containers
- e) Microbe based pesticides
- f) Pesticides made with essential oils (not including synthetic pyrethroids) without toxic synergists and
- g) Materials for which the inert ingredients are nontoxic and disclosed.

The term least toxic pesticides does not include a pesticide that is:

- a) Determined by the U.S. EPA to be a possible, probable or known carcinogen, mutagen, teratogen, reproductive toxin, developmental neurotoxin, endocrine disrupter or immune system toxin;
- b) A pesticide in U.S. EPA's toxicity category I or II

- c) Any application of the pesticide using a broadcast spray, dust, tenting, or fogging application.

Other Chemical Controls: Chemical controls will only be employed on an “as-needed” basis when problems exist that have not been or cannot be addressed by physical, cultural or biological practices. The following information is a sample of possible approaches. Specific chemical controls will change as availability and improvements in chemicals change.

- Weeds: Initial spot treatment will be with acetic acid / horticultural grade vinegar (‘CedarCide RidAWeed’ and ‘Burnout’). If required, spot treatment with glyphosate (‘Roundup’) will be used. No pre-emergent herbicide use will be practiced. For nutgrass, Manage (halosulfuron) will be used, if necessary.
- Diseases: Least toxic chemical controls for brown patch and take-all patch include corn gluten meal (Concern ® Weed Prevention Plus) and Thiophanate methyl (Green Light ® Systemic Fungicide Disease Control).
- Insects: Positive identification of the insect pest will be made prior to the use of any chemical control.

Use of IPM Plan

Pesticide products change on a regular basis, and those listed in this plan are provided for reference only. Listing of a specific product trade name does not constitute an endorsement of its use. Many pesticide products other than those listed in this plan are available and may be suitable for use. If a pest problem occurs that is not addressed by this management plan, or if the Ball Crew Operations Supervisor desires to use pesticides of greater toxicity than those listed, the Operations Supervisor shall alert the City of Pensacola Parks and Recreation Director. It should also be noted that this IPM Plan is a dynamic document and will periodically be reviewed and revised as circumstances in the City of Pensacola change and as new pest management products and techniques become available. The City of Pensacola Parks and Recreation Director will be notified whenever this document is substantially revised or altered.

Application of Pesticides or Chemicals

When it is determined that pesticides or chemicals are needed for pest management on athletic fields, only products registered for use in the State of Florida will be applied with strict adherence to label directions. Applications will be undertaken only qualified staff. No pesticides or fertilizers will be used within 150 feet of any known critical environmental features or streams.

Notification

Appropriate signs and notifications will be posted on or around athletic fields notifying the public prior to pest management activities that involve application of pesticides, herbicides or other potential chemical applications that could be harmful to humans. Appropriate efforts will be made to eliminate individuals coming in contact with any such applications to athletic fields within manufacturer specifications.

Recordkeeping

A log book of all pest sightings and pest management activities will be kept in the office of the Ball Crew Operations Supervisor 2130 Summit Blvd , Pensacola, FL 32503. This log will be kept current by and will be available for public viewing upon request. Additionally, any time a pesticide is used for pest management purposes, a copy of the pesticide label, as well as the pesticide's Material Safety Data Sheet (MSDS) will be kept on record in an easily accessible location as a reference for applicators on proper use, storage and safety. The Florida Department of Agriculture and Consumer Services Division of Agricultural Environmental Services Suggested Pesticide Recordkeeping Form is provided in **Appendix B** of this IPM Plan.

Training

City of Pensacola Parks and Recreation staff will be provided with training on the IPM policy during annual update training. Training will include the rationale for the IPM policy and program and specific elements including use of the pest-sighting log and prohibition on pesticide applications by non-certified individuals.

Additionally, designated will receive advanced training on identifying pest infestations and pest-conducive conditions. This training will improve the ability of staff to oversee compliance with City of Pensacola IPM policy and plan.

APPENDIX A

APPENDIX B



NICOLE "NIKKI" FRIED
COMMISSIONER

Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services

SUGGESTED PESTICIDE RECORDKEEPING FORM

Telephone Number (850) 617-7880

FDACS recommends recordkeeping for all pesticide applications regulated by Chapter 487, F.S., using this form or similar format. When properly completed, this form meets the recordkeeping requirements for restricted use pesticides and the central posting requirements for the federal Worker Protection Standard.

Licensed Applicator (R) _____ License No. (R) _____ Property Owner Authorizing Application (R) _____

1. Date 2. Start Time 3. End Time All R/W	Actual applicator if different from above (include license no. if licensed) (R)	1. Location/Description of Treatment Site (R/W) 2. Target Site or Crop (R)	Total Size of Treatment Area (R)	1. Pesticide Brand Name (R & W) 2. EPA Reg. No. (R/W) 3. Active Ingredients (W)	Total Amt. of Pesticide Applied (R)	Application Method (R)	Restricted Entry Interval (W)

(R) = For Restricted Use Pesticides

(W) = For Worker Protection Standard Requirement

(Vea dorso para definición de términos en español)

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