Grass Roots Ball Diamond Maintenance

Properly maintained ball diamonds are necessary to ensure player safety as well as fairness in the sport. Rutted infields and basepaths not only cause the ball to bounce erratically, but may also trip up players. Home plate and pitcher's plate should be set flush with the ground for the same reason.

Most maintenance of ball diamonds such as aerifying, fertilizing, seeding or sodding should be carried out in the fall for a variety of reasons. It allows more time for seed or sod to become established or for fertilizer to work, promoting good vigorous growth before play starts in the spring.

It also lessens the chance of delays in preparing the field because of uncertain spring weather.

Basepaths and Skinned Areas

Power brooms or fire hoses should be used occasionally to remove dirt and surface material from the turf and push it back on to the basepaths and skinned infields. Basepaths and skinned infields should also be edged occasionally to prevent turf from encroaching and to keep the lines neat and distinct.

On occasion, the skinned infield may require blading to level high spots and fill depressions. Compacted surface material should be scarified to loosen it, and then dragged to level. A satisfactory drag can be made from a section of chain link fence, dragged behind a tractor.

Rutting is one of the main problems encountered with basepaths. They should be maintained frequently to prevent them from becoming 'dished' and affecting the direction of the ball.

The areas around the bases should be raked daily if possible, and surface material added to the basepaths when necessary to bring them up to the level of the surrounding infield.

The surface material should also be checked every fall to ensure a proper mixture. The surface should have

enough sand to allow water to drain through it and keep the surface from becoming too sticky when wet or too hard when dry.

The surface must also have enough clay to bind the sand together and keep the surface from blowing. If sand or clay must be added, the infield should be levelled and scarified, the material added and the field dragged.

1) Rototill or gill skinned areas to a depth of 2.5 cm.

2) Rake and float skinned areas with a steel mat, leaving a slight crown for water drainage.

3) If skinned areas are too soft, roll to compact soil, and rake.

4) Fill depressions on skinned surface with silt or suitable surface material.

5) Fill any holes dug in front of the pitcher's plate, and ensure pitcher's plate and home plate are set flush with the ground.

Markings

A variety of materials are used to mark the playing lines on the field.

Hydrated lime has been used in the past to a large extent, but is being replaced by latex paint which is quicker to apply, easier to see and lasts longer. Caution should be exercise when using hydrated lime for safety reasons (Ed. Note: *hydrated lime should not be used due to potential burn of the eyes*).

Other marking methods include mixing limestone with water to make a whitewash; digging trenches and filling them with limestone, or burning the lines into the turf by spraying with a non-selective herbicide to destroy the vegetation, and then chalking the lines. Using the last method allows the lines to remain visible even when the lime is gone, but results in an uneven playing surface.

1) All lines are 5 cm wide.

2)Lay out the field using the dimensions suitable for the level of sport to be played (baseball, softball, slowpitch, etc.). Tie a cord to a large spike or nail placed at the rear point of home plate, stretch it out and attach it to the foul line poles extending out past first and third base.

3) set the line marker on the string and starting at the back of home plate, run it parallel over each 30 cm edge of home plate, extending to the foul line poles for base and foul lines.

4) Use a dry line marker for skinned areas and a wet lime marker for turf areas.

5) Mark in the batters' boxes, catcher's box, on-deck circles, coaches boxes, pitcher's circle. In addition, mark in a 0.9 metre line parallel to and 0.9 metres from the first base line, starting half way between home plate and first base.

6) As a time-saving measure, frames may be constructed of wood to the required dimensions and used to mark in the batters' boxes, removing the need to measure them out each time.

Aeration

The process of aeration promotes the growth of good turf by allowing water, air and nutrients to penetrate the soil and aid in root development, giving the turf greater ability to withstand dry periods.

Aeration is required when constant use of the field causes the soil to become compacted. Rollers or the use of heavy equipment on the field when it is wet can also aggravate the condition. When

compaction develops, it becomes difficult for water, fertilizer and air to enter the soil, and for nutrients to break down into a form useable by the plant.

Ball fields are usually aerated twice a year, in the spring and again in the fall after the playing season is completed. If the ground is too hard for the aerator to penetrate, a light watering will help loosen the soil.

Aeration also alleviates compaction problems in the dirt areas of the ball diamond, and the practice should not be limited to turf only.

After aerating, a topdressing can be applied and the field then dragged to smooth the surface, break up the plugs and fill the holes.

Fertilization

Fertilizers provide the nutrients that turf requires, including nitrogen, phosphorus and potassium.

Types of fertilizer used and rates of application are dependent on the growing conditions, and should be based on periodic soil analysis to determine actual amounts.

Fall applications of fertilizer will provide adequate nutrients at the start of the growing season the following spring, and lighter rates of nitrogen can be applied in the spring and early summer as required to promote healthy turf.

Commercial salt-based fertilizers should be applied evenly and when the turf is dry, to avoid burning. To ensure even distribution, it is best to apply granular fertilizer in two directions, applying half the recommended amount each time.

Reseeding/Resodding

Like other major maintenance practices, reseeding or resodding of worn or damaged turf is best done in the fall. It provides an opportunity for the new grass to become firmly established before it is subjected to use - time that may not be available if seeding or sodding is done in the spring.

Small areas can be reseeded by digging out or scalping the old turf, filling with a mixture of peat, sand and loam, and reseeding.

Large areas or completed fields can be reseeded by aerating thoroughly; overseeding the area; adding 1 to 2.5 cm of peat moss and overseeding again. The field should be dragged and rolled lightly to ensure good contact between the seed and the soil.

In some cases where major renovation is required, a sod cutter should be used to completely remove the old turf, and the field should be graded. Topsoil can then be added and the entire field reseeded.

When building up low areas, 1 to 1.5 cm layers of peat, sand and loam mixtures can be added at a time, seeded and raked. Up to 2.5 cm of soil can be added and the grass below will still grow through.

When resodding, the old turf must be completely removed and the area levelled. Add a proper topsoil mixture, if necessary. Particular attention must be paid to the depth of the new sod, so that when installed, it is level with the surrounding area. All crackers and joints should be topdressed.

Resodding is best done in the fall, at last 3 weeks before freeze-up, to ensure a good bond with the soil before it is subjected to heavy used. However, resodding may be dictated by the availability of the sod.

Watering

The moisture requirements of a ball diamond vary according to a number of factors, including type of soil; amount of natural rainfall; moisture loss through high temperature and winds, and the level of maintenance available.

As a rule, an average of 2.5 cm of water is required per week to maintain good turf growth. Water should be applied only as fast as the soil will absorb it, and until the water has penetrated the top 15 cm of soil.

Timing the watering practices depends largely on when the field is to be used. If the field is used for evening play, watering should take place in early morning so the turf is dry when play starts. Ideally, however, watering is best done in the evening when there is less evaporation and more water will be absorbed into the soil.

Mowing

Mowing frequency should be such that the turf does not grow more than 3.2 cm above the desired height.

Proper grass height is necessary because close mowing and light watering will cause shallow rooting of turf, making it susceptible to heat stress. Grass that's mowed to short may also promote weed growth by reducing the vigour and density of the turf.

Most grasses should be maintained at a height of 3.2 to 6.4 cm, although the recommended height varies with the species of grass.

Methods of mowing the outfield should be alternated to reduce the number of bare spots and encourage dense grass coverage.

With the first method, start at third base and mow down the left field foul line to the fence. The same procedure is followed from first base down the right field foul line to the fence,and from second base out to the centre field fence.

In the other example, the outfield is mowed crosswise, mowing back and forth along the infield edge of the outfield grass, and then working from the outfield edge of the grass toward the infield.

Weed, Disease and Insect Control

Well maintained and established turf is rarely susceptible to weed or disease problems.

The turf should be examined for any signs of weed, disease or insect infestation whenever routine maintenance such as mowing or watering is performed. However, no control should be undertaken without consultation with specialists to ensure an accurate diagnosis of the problem.

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