

Aiea Ball Field Clean-up - 2010.  
A collaboration of UH-Manoa and Honolulu City and County Parks and Recreation Division  
Prepared by Dr. Joe DeFrank – Updated 01/31/11

Description	Date	Day of year	Days after previous activity
01-Foliar Feed Ca & K Nitrate, w/Fe	08/13/10	225	0
1 <sup>st</sup> herbicide spray (Barricade/Celsius/Revolver)	09/01/10	244	19
02-Thatch breakup + K nitrate	09/23/10	266	22
2 <sup>nd</sup> herbicide spray (Sencor)	10/14/10	287	21
3 <sup>rd</sup> herbicide spray (Celsius/Monument)	11/10/10	314	27
03-Foliar Feed K-nitrate, w/Fe	11/24/11	328	14
4 <sup>th</sup> herbicide spray (Sencor)	12/08/10	342	14
5 <sup>th</sup> herbicide spray (Celsius/Monument)	12/29/10	362	20
2010 ends	12/31/10	365	3

**Activation of turf growth with foliar nutrient solution.**

The procedure for this cleanup starts with insuring that irrigation is provided for complete coverage of the grass infield and turf along the base path. With complete irrigation coverage provided the next step involves the growth activation of turf and weeds with a high level of foliar applied nutrients. The nutrients were applied (on 08/13/10) with a gasoline powered hydromulch applicator with a 50 gallon tank. The nutrient sprays were applied in two batches of 50 gallons and each batch was applied to .4 acres of turf that included the infield (90 ft. X 90 ft.) and the turf areas along the outside portions of the 1<sup>st</sup> and 3<sup>rd</sup> base lines (160 ft X 30 ft. X 2-both sides) extending beyond the back of the infield arc. Applying 50 gallons to .4 acres amounts to 125 gallon/a, applied 2 times the total gallons per acre is 250 GPA. The liquid fertilizer blend that contained potassium nitrate, calcium nitrate and iron/micro nutrient blend was applied on 08/13/10.

The nutrients used for pre spray activation were:

**Yara Brand Potassium Nitrate Crystalline 13.7-46.3-0** in a 50 lb bag.

The recommended amount is 50 lb/a. To obtain this rate add 10 pounds to 50 gallons and apply twice to .4 acres for a total rate of 50 lb/a. However this time (08/13/10) 20 pounds were added to 50 gallons and applied twice to .4 acres for a total rate of 100 lb/a doubling of the recommended rate. The actual rate of N is 13.7 lb/a.

**Yara Brand Calcium nitrate 15.5-0-0** in a 50 lb bag.

The recommended amount is 200 lb/a of this formulation. To obtain this rate add 40 pounds to 50 gallons and apply twice to .4 acres for a total rate of 200 lb/a. The actual rate of N is 31.0 lb/a.

**Feature 6-0-0, with 10% Fe, 2.5% Mn, 1% Mg and 8% S** in 3.0 lb bag.

The recommended amount is 6.0 lb/a. To obtain this rate add 1.2 lb to 50 gallons and apply twice to .4 acres for a total rate of 6.0 lb/a. The actual rate of N applied is .36 lb/a.

### **Herbicide application following nutrient turf activation.**

Following the nutrient activation phase of the cleanup will be the herbicide application phase. The first application will be composed of a mixture of Revolver, Celsius and Barricade with a 1% v/v addition of methylated seed oil. At 25-30 days after this initial application a second application of Sencor will be applied. At 15-25 days after the second application the entire site will be verticut to remove dead weeds and the thatch layer of the Bermuda grass sod. After thatch removal core aeration will be conducted with cores removed and holes filled with dune sand. Once the sand is applied and raked into the soil, Ronstar G and turf fertilizer will be applied to control weed during the turf fill in phase. Nutsedge and some broadleaf weeds will most likely appear during fill in and these will be controlled with Monument (for sedges) and Trimec Southern or SpeedZone Southern (for broadleaf weeds). With regular mowing and proper irrigation, the infield and areas outside the baselines should be free of weeds and in top turf shape.

#### **1<sup>st</sup> herbicides application (09/01/10).**

1. Spray application is made using a hand held 5 nozzle boom fitted with TeeJet 8004LP nozzle tips. Spray powered with a gasoline Honda with Hypro roller pump. GPA is 40 with 13 PSI at handle. Tank is 26 gallons; applying at 40 GPA can cover .65 acres or 28,314 ft<sup>2</sup>. Estimated area of infield and turf between base paths and dugouts home to 1<sup>st</sup> and 3<sup>rd</sup> base is .40 acres or 17,424 ft<sup>2</sup>. Any extra spray will be applied to turf on the outfield side of the infield arc.
2. Herbicides applied will be:
  - a. **Barricade**, recommended amount is .5 lb/a, amount added to 26 gallon tank is 3lb (136 g).
  - b. **Celsius**, recommended amount is 4.9 dry oz/a, amount added to 26 gallon tank is 3.2 dry oz (91 g).
  - c. **Revolver**, recommended amount is 26.2 oz/a, amount added to 26 gallons is 17.0 oz (775 ml).
  - d. **MSO** (methylated seed oil), added to obtain 1% of finished spray, amount added to 26 gallons is 33.3 oz (945 ml).

#### **2<sup>nd</sup> fertilization & thatch breakup and (09/23/10).**

At this date a flexible drag harrow was pulled across the infield and baselines to breakup the thatch and isolate weedy grasses from the surrounding soil. A total of 150 pounds of potassium nitrate (13.7-46.3-0) applied to .4 acres of the infield and sidelines (field to fence) of the 1<sup>st</sup> and 3<sup>rd</sup> base paths.

#### **2<sup>nd</sup> herbicide application (10/14/10)**

On this date Sencor 75DF applied with a .5% v/v MSO. A total of 26 gallons will be applied 2 times for an effective GPA of 80 gallons. Into each 26 gallon batch add 103 grams Sencor 75 DF and 500 ml MSO. Sencor rate is 2/3 lb/a with 80 GPA carrier volume.

### **3<sup>rd</sup>. herbicide application (11/10/10)**

Observations made at 18 days after the Sencor indicated that goose grass appears to be completely control with large clumps rotting and matted to the soil due to heavy fall (early Nov-2010) rains. The second application of Celsius was made 27 days after the Sencor application. Using a 80 GPA will require 1.6 oz or 45.5 grams into 26 gallons and apply 2 times to the ball field. Also used 1% MSO or 33.3 oz or 945 ml per 26 gallons. Monument was also used, two 5-gram packets in 26 gallons and applied only once to the entire infield and base lines. We should have split the 5 gram packets into each 26 gallon batch but goofed again.

### **3<sup>rd</sup>. foliar feed (11/24/10)**

Foliar Feed 14 days after Celsius/Monument (OK-11/24/10). We used a 50 gallon hydromulch applicator and made two applications with passes running perpendicular to each other.

Yara Brand Potassium Nitrate (13.7-46.3-0.0) we need **20 pounds total**, 10 pounds in 50 gallons and apply 2x's. On this date we applied 20 and 23.8 pounds in each batch, thus a doubling of intended rates

Yara Brand Calcium nitrate (15.5-0-0) we need **80 pounds total**, 40 pounds in 50 gallons and apply 2x's. On this date we did actually apply 40 lb in each batch

Feature 6-0-0, with 10% Fe, 2.5% Mn, 1% Mg and 8% S, we need **2.4 pounds total**, 1.5 lb in 50 gallons apply 2x's. Ok, just right 1.5 lb in each batch and used the entire 3 lb bag.

### **Observations on 11/30/10:**

On this date it is clear that the Dallas grass is drying up and appears to be controlled at 90-95%. The Love grass is not showing any necrosis just slight yellowing and reduced vigor. However, the Love grass was relatively easy to pull out by the roots. Goosegrass is now regrowing from old stumps and not from seed germination. Looks like it's time for another Sencor application.

### **4<sup>th</sup>. Herbicide application on 12/08/10)**

On this date Sencor 75DF will be applied with a .5% v/v MSO. A total of 26 gallons will be applied 2 times for an effective GPA of 80 gallons. Into each 26 gallon batch add 103 grams Sencor 75 DF and 500 ml MSO. Sencor rate is 2/3 lb/a with 80 GPA carrier volume.

### **5<sup>th</sup> Herbicide application on 12/29/10)**

Herbicides applied:

- a. Celsius, recommended amount is 4.9 dry oz/a, amount added to 26 gallon tank is 3.2 dry oz (91 grams). For a double application, into 26 gallons add 46 grams and apply 2 times.
- b. MSO (methylated seed oil), added to obtain 1% of finished spray, amount added to 26 gallons is 33.3 oz (945 ml).
- c. Monument, add 1 5-gram packets in 26 gallons and apply 2 times.

The weather on this day was cloudy with rain threatening. Previous to this spray day, Oahu was very rainy and field was at full moisture holding capacity. Grass was 3-4 inches and wet, however no rain day of spray or next.