

# Harvest Life

## Turf & Grass™

### Description

Harvest Life Turf & Grass™ is a new generation product designed to improve turf health by enabling plants to use their own defense mechanisms to counteract pest and disease damage. Harvest Life Turf & Grass™ is a combination of bio-stimulants used to promote the growth of plant hormones necessary to combat pathogenic attack which lead to stress and poor performance in growth and quality.

Harvest Life Turf & Grass™ provides the turf with a constant stream of bioflavonoids. Bioflavonoids act as elicitors which stimulate the production of phytoalexins – the only source of immunity that turf can generate against pathogenic intrusion. Optimal production levels of phytoalexins allow turf to successfully fight disease caused by pathogens.

Harvest Life Turf & Grass™ can be used on all turf areas including greens, tees, approaches and fairways, especially during the summer and winter seasons where the turf suffers frequent disease attacks from Fusarium and other pathogens. Harvest Life Turf & Grass™ is suitable for all species of turf.



### Benefits



- Activates plants' "own defense systems" to help combat the risk of damage from plant pathogens.
- Activates and enhances the production of phytoalexins.
- Increases brix (sugar) level of the plant.
- Aids water penetration by use of organic wetting agents.
- Gives rapid recovery from disease scarring and dry patch damage.
- Acts as a synergist to improve plants' uptake of nutrients.
- Reduces stress and promotes plant vigor.
- Harvest Life Turf & Grass™ can be used on all turfs including: Greens, Tees, Fairways and Yards - any place turf or grass grows.
- Harvest Life Turf & Grass™ is bio-based, all-natural and biodegradable.

### Applications

Apply once every two weeks to condition the turf against disease and dry patch especially at those times when such attacks can be expected. Immediate action treatment aids quick recovery after turf damage. Apply at the first signs of disease attack. Harvest Life Turf & Grass™ cannot work on dead grass, or when temperatures are 6° C. or less. Dilute Harvest Life Turf & Grass™ at a ratio of 1:200 with water.

For large area application rates; dilute 1 gallon with 1,000 gallons of water (this will treat 32 acres). For applications of one acre; dilute 4 ounces with 33 gallons of water (this will treat 1 acre). For small area applications dilute 2 ounces with 16.5 gallons of water (this will treat 1/1 acre). For anthracnose, use with a suitable proprietary fertilizer to ensure maximum nutrient take-up by the plant, giving strong healthy growth. For dry patches, use in conjunction with a proprietary thatch digester to eliminate the thatch and to out-compete the mycelia that often causes the basis problems. It is effective against Brown Patch, Rolf's Disease, Slime Moulds, Rust, Leaf Smut and Curvularia.



### Advantages

Plants are capable of defending themselves against viral, fungal and bacteria attack through production of phytoalexins. Phytoalexins are anti-toxins naturally-produced by the plant. Phytoalexins are not usually detected in plants as they are not stored. They are produced rapidly (from 1 to 8 hours) once the plant is under attack. Sometimes, the natural mechanism of the plant is not able to control this attack because the pathogens are able to "swamp" the phytoalexins under abnormal growing conditions. Reduced production of phytoalexins is due to several factors (genetic changes in the plant) caused by plant stress, excessive use of synthetic agrochemicals, temperature, humidity and climate.



The brix level is the level of sugar in the plant and is an indication of the health of the plant. Harvest Life Turf & Grass™ not only assists the plant in resisting pest and disease attack by stimulating the production of phytoalexins, it also increases the brix level of the plant at the same time. Within 5 days of treating the plant with Harvest Life Turf & Grass™, the brix level of the plant will have increased. The higher the brix level, the healthier the plant, and the better the plant can fight off insect attack.

Item Number	Product	Unit Size
3201-001	Harvest Life Turf & Grass™	1 gal.

# Harvest LifeTurf & Grass™

## Case Studies

Trial were performed to evaluate the effect of Harvest Life Turf & Grass™ on high stress turf areas. An increase in vigor and disease resistance was observed with Harvest Life Turf & Grass™ acting as a nutrient synergist. Fine Calcium Carbonate powder was applied as a spray with the Harvest Life Turf & Grass™.

	Crude Protein	ADF	Calcium	Phosphorous	Magnesium	Potassium
General Fertilizer	20.8	34.8	3.1	0.47	0.57	1.62
General Fertilizer - Harvest Life™	27.3	25.9	6.46	0.7	3.23	2
Percentage Change	+31	-25	+108	+49	+467	23

### Diseases Treated with Harvest Life Turf & Grass™



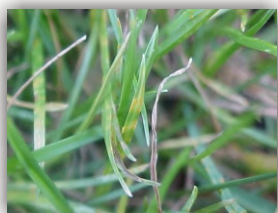
Algae affects all types of turf grasses year round. It is caused by high surface moisture, inadequate drainage and insufficient light and air movement. Algae is a very primitive plant that is bluish-black in color and is visible on the ground's surface. It may be peeled off the surface when dry. To prevent Algae from damaging turf grasses, avoid over watering, increase light levels, increase air circulation and treat with Harvest Life Turf & Grass™.

Brown Patch affects Bents, Ryes, Fescue and Kentucky Blue Grass especially during the spring and summer months. Brown Patch is caused by high humidity levels, excessive soil moisture and inadequate drainage, excessive nitrogen and thatch levels. It is seen as an irregular circular-shaped "smoke ring." The disease attacks the leaf of the plant, turning them dark brown. Avoid over-watering with the use of Harvest Life Turf & Grass™.



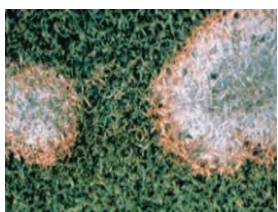
Spring Dead Spot affects Bermuda, Couch, Buffalo, Kikuyu and Carpet Grass in the autumn, winter and spring months. The damage Spring Dead Spot causes is continual, and begins in autumn and then becomes prominent in spring when there is a well-defined circular areas of leached leaves. This root rotting disease affects the roots and stems, turning them black in color. Correcting the Ph levels to 6.0 to 6.5 and applying Harvest Life Turf & Grass™ will eliminate the Spring Dead Spot Disease.

Rolf's Disease affects bent and winter grass during the spring and summer months. It is caused by warm humid weather and dry soils with excessive thatch. Generally, the turf is unhealthy when affected by Rolf's Disease. Rolf's Disease appears as a yellowish "donut" shaped area that is 6 to 8 cm in diameter with visible re-growth in the center. Rolf's Disease can be eliminated with a consistent regime of Harvest Life Turf & Grass™.



Rust affects a variety of turfs especially ryes and Kentucky Blue Grass, nearly present all year because of the extremes of weather conditions. It is caused by warm weather, moderate to high humidity with heavy dews and nitrogen deficient soils. Rust appears as yellow-orange or reddish-brown powdery spots on leaves. The leaves turn yellow, wilt and die. It is a parasitic leaf disease. By applying Harvest Life Turf & Grass™ in a balanced regime, the Rust parasitic leaf disease can be eliminated.

Slime Molds affect all turf grasses, particularly in the spring and summer months. It is caused by moderate temperatures and excessively wet soils with poor drainage. Slime Molds are bluish-grey or yellowish-white and are unsightly as they accumulate on the leaf surface. Slime molds are considered a saprophytic disease. To promote a healthy turf, use Harvest Life Turf & Grass™ in balanced regime.



Fusarium affects bent, rye and winter grasses especially, during the autumn, winter and spring months. It can be caused by excessive growth and changes in temperature, poor drainage and a deficiency of minerals. Fusarium, a leaf disease, ia seen as small pale yellow to pink areas. These areas may enlarge and merge together. This leaf can be eliminated by a balanced regime of Harvest Life Turf & Grass™.

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DATE PREPARED: 1/12/05  
DATE REVISED: 1/12/05  
DATE OF ORIGINATION: 1/12/05

**HAZARD RATING**

- 1= Slight
- 2= Moderate
- 3= High
- 4= Extreme
- 0= Insignificant

HEALTH	
FIRE	0
REACTIVITY	0
P.P.E	B

**I. PRODUCT IDENTIFICATION:**

Harvest Life Turf

COMMON NAME: CLEANING COMPOUND  
GENERIC NAME: CLEANER  
CHEMICAL: MIXTURE

**II. HAZARDOUS INGREDIENTS:**

Ingredients	CAS	OSHA PEL	ACGIH TLV
DOES NOT CONTAIN ANY HAZARDOUS INGREDIENTS			

**III. PHYSICAL/CHEMICAL CHARACTERISTICS:**

BOILING POINT:	212	APPEARANCE:	BROWN
SPECIFIC GRAVITY:	1.0072	FORM:	LIQUID
MELTING POINT:	N/D	ODOR:	BLAND
EVAPORATION RATE:	N/D	VAPOR DENSITY:	N/D
SOLUBILITY (H2O, 25C):	SOLUBLE	pH:	6
VOLATILES CONTENT:	0	VOC (g/L):	0

**IV. FIRE AND EXPLOSION HAZARD DATA:**

FLASH POINT: DEGREES More than 300F  
LEL: N/D  
UEL: N/D  
Autoignition Temperature: N/D  
Extinguishing Media: Product is water-based and will not support flames.  
Unusual Fire/Explosion Hazards: Closed containers exposed to heat may rupture due to pressure buildup.  
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, hydrocarbons, steam.

**V. REACTIVITY:**

STABILITY: Stable  
CONDITIONS TO AVOID: None known

**VI. HEALTH HAZARDS:**

**ROUTES AND INDICATIONS OF EXPOSURE**

EYES: May cause irritation to eyes.  
SKIN: Good industrial hygiene recommended.  
INHALATION: N/A  
INGESTION: May cause irritation.  
TOXICITY DATA: None as listed by OSHA, NTP, IARC or EPA

**VII. SPILL, DISPOSAL PROCEDURES AND PRECAUTIONS:**

**HANDLING:** Keep closed when not in use. Store at room temperature. Prevent product from freezing. Follow MSDS and Label warnings even after package is empty.  
**Material Spillage:** Contain, retrieve spilled materials (absorb, pump, vacuum)  
**WASTE DISPOSAL:** This material is NOT defined as hazardous by the Resource Conservation and Recovery Act. It is the product users responsibility to determine at the time of disposal, whether a material containing the product or derived form the product should be classified as a hazardous waste. (40 FR 261020-40). Spill and releases of this material are not reportable under S.A.R.A. (III) Sec. 313.

**VIII. PERSONAL PROTECTIVE EQUIPMENT (P.P.E.):**

**PROTECTIVE EQUIPMENT:** Wear safety glasses and gloves.  
**RESPIRATORY PROTECTION:** General ventilation recommended.  
**ENGINEERING CONTROLS:** Keep containers closed when not in use. Do not handle or store near strong oxidants.  
**PERSONAL HYGIENE:** Cleanse skin thoroughly after contact.

**IX. REGULATORY INFORMATION:**

D.O.T. SHIPPING NAME: NON-REGULATED D.O.T. HAZARD CLASSIFICATION: N/A  
S.A.R.A. III Sec. 311 & 312: N/A  
S.A.R.A. III Sec. 313: NOT covered under Sara 313  
R.C.R.A.: NO  
TSCA Registry: YES

**EMERGENCY FIRST AID:**

EYES: Flush eyes for fifteen minutes with water.  
SKIN: Wash exposed areas with soap and water.  
INHALATION: Remove victim to fresh air or oxygen supply. Seek medical attention if breathing difficulty persists.  
INGESTION: If conscious, give victim two glasses of water to dilute ingested material. Do not induce vomiting.