



Research Driven,
Proven Results™

PREPARE FOR WINTER STRESS

Every autumn in the northern United States and Canada, golf course superintendents begin to prepare for the coming winter to improve the likelihood of turfgrass survival on greens, tees and fairways.

While the genetics of the bentgrass or annual bluegrass species and the severity of the winter weather have the greatest impact on survival, there are cultural practices that golf course superintendents can employ to help harden the turf for the oncoming cold weather and improve survivability. Spring turf quality will depend in large part on the plant health and hardening of the turf achieved during fall.

One of the factors known to influence winter hardiness is the potassium (K) level in the plant tissue. Research reports and recommendations from several major universities recommend K levels of 3% or more for best winter protection. Potassium functions as an osmotic regulator within the plant to prevent ice crystal formation within sensitive crown tissue.

GRIGG™ Tuff Turf® is a highly efficient K source designed to help the plant cope with stress, disease, and to prepare for winter. Tuff Turf® also contains silicon for increased cell strength and turgidity. The inclusion of magnesium helps increase chlorophyll production for improved color.

Research from Oregon State University and the United Kingdom has shown that sequential applications of GRIGG™ P-K Plus® at 6 fl oz per 1,000 ft² on 14 day intervals during fall and winter (where possible) may significantly reduce the incidence of pink snow mold*. P-K Plus® (3-7-18 + 14% phosphite) delivers low amounts of nitrogen and high amounts of potassium for foliar absorption.

In general, foliar fertilization is more efficient than soil fertilization. Combine that with the fact that plants begin to utilize less available K when soil temperature cool to 50° F and below. Foliar fertilization bypasses this problem!

**For a distributor near you contact:
800 300 6559 or www.grigg.co**

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GRIGG Winter Stress Nutrition Program

Begin applications around September 1 and continue until just prior to turfgrass dormancy. Apply the following per 1,000 ft²:

GRIGG™ Tuff Turf® 1-0-14	6 fl oz
Or GRIGG™ P-K Plus® 3-7-18	6 fl oz
And	
GRIGG™ Ultraplex® 4-0-3	3 fl oz
GRIGG™ Carboplex® 6-4-4	6-9 fl oz

Also note: Using Carboplex™ as a foliar applied product at a rate of 6 – 9 fl oz 1,000 ft² can boost energy fixation and carbohydrate storage in the plant to achieve and maintain maximum winter hardiness.

Carboplex™ combined with Ultraplex® and P-K Plus® in the autumn is a foliar fertility program optimized to maintain desired growth and color, boost plant potassium levels, increase carbohydrate storage, and help reduce the incidence of snow mold disease*.

For more than 18 years, GRIGG has been dedicated to research supporting Nutritional IPM tools for golf course superintendents. The above recommendations are research based and will be successful in helping reduce winter injury to turf. For more details on all our ongoing research visit us online at www.GRIGG.co.

** P-K Plus® is not a registered fungicide and should be used as one component to an integrated approach to pest management – something we call Nutritional IPM™*

