

Rooted in Science

After reading the March column, you're now aware of research at BASF that reveals plant health benefits, which can help golf

course superintendents and other turf professionals better manage stressed turfgrass. You may be wondering what this means to you and asking yourself,

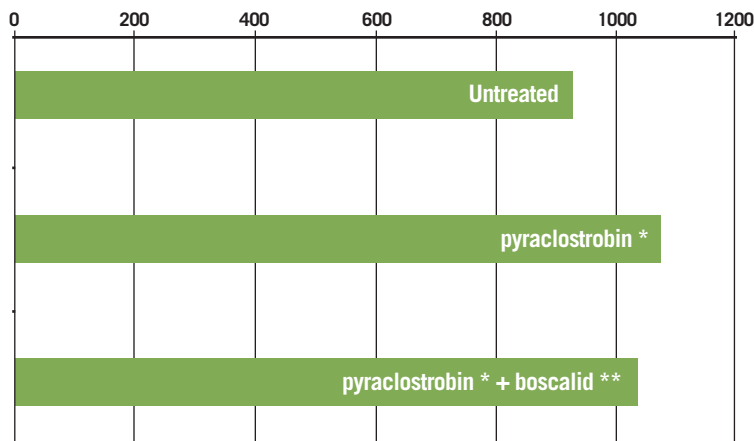
"How can I go from research to my real world?"

Research across the United States has demonstrated that pyraclostrobin effects in turf are not easily documented above ground — the turf is green, has good chlorophyll content, is healthy and looks like any other turf. The big differences are occurring below ground where we don't usually look.

When turfgrass goes through drought stress, current research shows that the pyraclostrobin-treated turf has deeper roots and more roots compared to turf that is untreated. This holds true for both pyraclostrobin alone (a new liquid formulation which is pending EPA registration) and when combined with boscalid.

Bentgrass varieties A-1, Penncross and Colonial were grown in United States Golf Associ-

BENTGRASS TOTAL ROOT LENGTHS (CM) UNDER DROUGHT STRESS



* new liquid formulation pending EPA approval
** pyraclostrobin rate reduced in combination

6 US trials: A-1, Penncross and Colonial creeping

ation specification sand mix under greenhouse conditions. Bentgrass was either treated with fungicide or left untreated, then exposed to normal irrigation or reduced irrigation to simulate drought. The turf was continually mowed at greens height to simulate normal maintenance practices.

When root samples were pulled from the sand cores, the total length of the roots and the volume in centimeter/cubic meter (cm/m³) were significantly increased when pyraclostrobin was applied under drought-stress conditions.

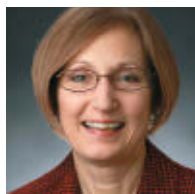
TifEagle bermudagrass was also evaluated and a similar response was observed when it was stressed with short days and drought.

With both turf types, more roots were present following a pyraclostrobin application, and this difference in root growth

became greater as the turf plants were stressed. Pyraclostrobin-treated plants under stress had similar root lengths and volumes compared to untreated-unstressed plants.

Superintendents understand the value of having healthy roots. Deeper, healthier roots can sustain a turf plant during any stress that comes along — the plants are able to tolerate the stress better and recover more quickly. Turf managers know that developing a strong root system in spring can help them through the summer months — now pyraclostrobin can also help through those tough summer months not only by providing excellent disease control, but also by providing longer, higher volume turf roots. ■

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Editor's note:
In May's column, look for how BASF is connecting science to superintendents.

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