



“Crop Failure”

by Doug Brede, Ph.D.



At first, 2015 started out like a normal crop year in the Pacific Northwest. But there were warning signs. Skiers complained of lack of snow on the slopes. Resorts closed after only a few weeks. Winter temperatures were so mild the ground never froze.

June and July brought record heat. Most seed fields were ready to harvest 2 to 3 weeks earlier than normal. Then came the bad news: Seed cleanouts were averaging well below 50%.

“Many people have been calling it a ‘crop failure,’” says Glenn Jacklin, production [Continued page 2](#)



Number of wildfires burning between Portland and Vancouver in August 2015 as a direct result of the high temperatures and drought in the Northwest since January. The temperatures resulted in poor vernalization and pollination, culminating in an epic crop failure across grass seed and agronomic crops.

Introducing ‘Spyglass’ Perennial Rye

by Susan Samudio, M.Sc.

Be on the lookout for Jacklin’s newest perennial ryegrass - **Spyglass** (experimental JR-192) *Lolium perenne*. Seed is available right now. **Spyglass** has been tested in NTEP trials since 2010. In the most recent preliminary results, **Spyglass** scored in the top 10 varieties in overall quality and well as being highly rated in several key performance areas.



Spyglass is a good solution for areas with salt issues or that use gray water for irrigation. **Spyglass** was tested in a University of Rhode Island greenhouse water bath salt study where salt levels were as high as 17500 ppm (27 dS m⁻¹). For reference, sea water is about 45 dS m⁻¹ and at 10-20 dS turf managers should consider using a species other than ryegrass. From 12 to 16 dS **Spyglass** maintained 100% ground cover, at 20 dS level 71% ground cover remained. A good salt tolerant blend would include **Spyglass** with Caddieshack II and Accent, which have also shown enhanced salt tolerance.

With today’s water restrictions, drought performance in turfgrass is a concern. In a Virginia drought study where irrigation was withheld during June and July, **Spyglass** went dormant but then recovered when irrigation was turned back on in August. [page 2](#)



Spyglass (JR-192) test plot, Green Velvet sod farm, near Dayton, OH

Crop failure, continued

director for Jacklin Seed. "The last time I can remember such a devastating yield failure was in the late 1980's. That failure prompted seed prices to nearly double and called for research at universities to try to find the cause."

Evidently the warm ocean temperatures and strong El Niño offshore caused grasses to miss their normal vernalization (cold treatment) that switches plants from vegetative to reproductive during the winter months. In addition, 100° temperatures during pollination caused pollen grains to dehydrate and die before they met their intended flower. Yields were off as much as 90%, depending upon species.

Grass seed was not the only casualty. Agronomic crops such as wheat were off 30%. But with the agronomic crops, many farmers carry crop insurance against failures. Crop insurance does not cover turfgrass seed crops. As a result of getting "stung" this year, some farmers will likely depart from grass seed production to the safety of insurance-protected agronomic crops in the future.

Damage wasn't confined to field crops. USA Today reports that the freakishly hot, dry weather in the Northwest is responsible for killing millions of fish in the overheated waters of the region's rivers and streams.

"We've lost about 1.5 million juvenile fish this year due to drought conditions at our hatcheries," Ron Warren of Washington State's Department of Fish and Wildlife said in a statement. "This is unlike anything we've seen for some time."

Here's a quick rundown of the damage to grass seed crops:

Kentucky bluegrass yields were off across all botanical types. The low-end common types were off 20% in yield, while the elites were off 50 to 90% due to a lack of vernalization – the plants did not receive enough freezing winter weather. One field in Washington which has consistently yielded 1500 pounds per acre came in at 150 pounds.

The lower yields seemed to be a combination of fewer seedheads and smaller seed. It didn't matter whether the field was irrigated or not – moisture availability was not the issue.

Seed quality was also impacted. Germination rate of heat-impacted seed will be lower than normal. In addition, weeds such as alkali grass will be more prevalent in lots from 2015.

Creeping bentgrass is only now being cleaned and we don't have good estimates across the species. But it looks like a 30% reduction in yield, mainly due to high temperatures during pollination. The pollen just dried out before it got to the flower. Carryover of seed from the 2014 crop is sparse on bentgrass.

Tall fescue yields are off 25%; ryegrass yields are

off 25-30%. There was some carryover of tall fescue seed from 2014 which should help cushion the loss. In spite of that, fescue prices have already climbed over \$.20 a pound, possibly reacting to shortages in the other species.

Seed produced in Madras or LaGrande, Oregon or Nez Perce, Idaho did not seem to have been affected. These areas are generally cooler and got sufficient vernalization and were spared the high temperatures during pollination.

On the news this morning, forecasters are calling for a "Godzilla El Niño" forming across the Pacific right now. They speculate that a normal El Niño caused the warm winter and hot summer in 2015. The new El Niño is reportedly much broader, with anticipated effects on the Northwest for 2016 such as reduced precipitation and higher temperatures. 🌧️

Spyglass, continued

By early September, **Spyglass** was back to 59% green which was comparable to the top rated entry in the trial.

Its dark green color and fine texture produces a beautiful, high performance turf, and **Spyglass** thrives under diverse weather conditions from hot/humid summers to cold winters. **Spyglass**' best performance has been in the North Central and Transition zones.

Tested at several locations for wear, **Spyglass** shows good wear tolerance for sports field use and ranked 7th in quality in a California traffic stress study. **Spyglass** was also comparable to the top entry in Pennsylvania and Virginia traffic trials.



Spyglass (foreground) surviving a salt screening

Spyglass is a good choice for winter overseeding of dormant bermudagrass and has been tested in both company and NTEP locations. **Spyglass** provides a uniform overseeding quality during the winter and transitions in early summer back to bermudagrass and is adaptable to all golf course mowing heights for winter overseeding of dormant bermuda.

For permanent turf it adapts from ½" (13 mm) to higher cutting heights of 1½" to 3" (37 to 75 mm) for parks and home lawns.

Spyglass performs well alone or in mixtures with Jacklin bluegrasses or fine fescues in temperate and transition zone climates. **Spyglass** has shown excellent seedling vigor providing quick grow-in of new plantings. For lawns, plant at 4-7 lbs/1000 ft.² (20-35 g/m²). 🌱