

pH Meters-

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alternative to filling the spray tank is to fill a jar with water.

3. Check the pH of the water. It is best to test the water soon after filling as the water pH will change with time.

4. Buffering agents should be added as needed to correct pH imbalance. Remember to test the compatibility of buffering agents with the pesticides you will be using. In addition, if a solution will be left for a long time (i.e. overnight) a buffering agent should be added to prevent a change in pH.

5. Re-check the pH.

6. Add pesticides.

TECHNOLOGY TO MEASURE pH

pH measurement technology ranges from high to low tech and high to low priced. On the low tech/price end are pH test strips, which cost around \$5 for 100 strips. pH test strips are a piece of paper that when dipped in a solution react to the solution's pH by turning a color. The user matches the strip to a color guide to determine the pH of the solution. As you can imagine the accuracy of pH test strips is extremely low, with an accuracy of +/- 2 on the pH scale. One source for pH test strips is Gempler's. Superintendents should use hand-held electronic pH meters, which cost \$25 to \$200 dollars. With hand-held electronic pH meters you get what you pay for. If you spend less than \$50

do not expect to get a quality meter that will last a long time. If you spend over \$50, you will get the following features: water-proof, temperature compensation, floats in water, calibration samples, and replaceable sensors. I have seen several superintendents use multiple \$25-50 pH meters in a year due to "accidents," where higher end models tend to last several years. A couple of good pH meters are Spectrum Technologies FieldScout SoilStik and Oakton Waterproof pH Testr.

There are even more expensive models on the market, such as the IQ 150 pH Meter for \$715. These pH meters are very accurate and come with many other features, such as a probe to determine soil pH. In my experience, the greater accuracy and extra features do not justify the additional expense for a superintendent. If you plan to do other pH testing, then it is possible one of these models would work better for you.

When was the last time you checked the pH of your carrier water? If it has been a while, I suggest you invest in a meter and start checking the pH of your carrier water regularly. It could be the best \$100 you spend this year, when you consider the potential increased pesticide efficacy.

(Editor's Note: Aaron Johnsen is a Professional Product Advisor with WinField Solutions and an adjunct lecturer at the University of Wisconsin - River Falls. He can be reached at arjohnsen@landolakes.com or 651.895.2601. Sources: Seaman, A.J. and H. Riedl. 1986. Preventing decomposition of agricultural chemicals by alkaline hydrolysis in the spray tank. New York's Food and Life Bulletin 118: 1-7. Park, D. and J-H. Chong. 2010. A question of quality. Golf Course Industry 22 (3): 44-48.)



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The Savory Supe

By **Scottie Hines, CGCS**
Windsong Farm Golf Club



Bone-In Rib Eye Steaks with Sweet, Pan-Roasted Garlic

Serves: 4

Prep time: 10 min., plus about 20 min. for the garlic

Grilling time: 6 to 8 minutes

25 garlic cloves, peeled

1/8 teaspoon crushed red pepper flakes

1/2-1 cup extra-virgin olive oil

4 Bone-in Rib-Eye Steaks, each 10 to 12 ounces and
about 1 inch thick, trimmed of excess fat

Sea salt

Ground black pepper

1. In a small saucepan over low heat, combine the garlic and red pepper flakes with 1/2 to 1 cup of oil, making sure you have enough oil to cover the garlic cloves. Cook at a low simmer until the garlic starts to brown, about 20 minutes. Remove the pan from the heat and allow the garlic to cool in the oil. The garlic will continue to soften and brown until the oil cools. Set aside.

2. Pour 1/4 cup of the garlic oil onto a sheet pan.

Dredge the steaks through the oil, coating both sides.

Season evenly with salt and pepper. Allow the steaks to stand at room temperature for 15 to 30 minutes before grilling.

3. Prepare the grill for direct cooking over high heat (450° to 550°F).

4. Brush the cooking grates clean. Grill the steaks over direct high heat, with the lid closed as much as possible, until cooked to your desired doneness, 6 to 8 minutes for medium rare, turning once or twice (if flare-ups occur, move the steaks temporarily over indirect heat). Remove from the grill and let rest for 3 to 5 minutes.

5. Serve the steaks warm, topped with a generous sprinkling of salt and some garlic. Spoon some of the garlic oil over the steaks, if desired.

Enjoy!

- *Scottie Hines, CGCS*

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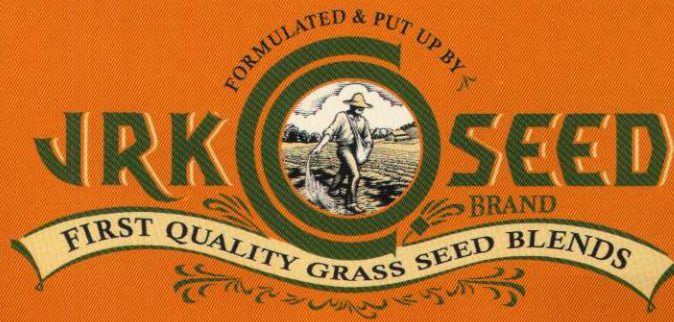
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