

**A Comparison of Four Radish Varieties Grown on the Coast  
UC Cooperative Extension, San Mateo and San Francisco Counties  
Elkus Ranch, Spring 2014**

**Janet Didur, Master Gardener 2008**

**Introduction**

Four varieties of radish were planted in the spring of 2014 at Elkus Ranch. The general goals of this trial were to document planting, watering, comparative growth, vigor, and taste in order to assist the home gardener in their seed selection. The study was conducted in a Zone 17 coastal climate.

**Statement of Intent**

The intent of this study was to test the vitality, productiveness, appearance and taste of four varieties of radishes including: **Amethyst**, **Red Head**, **Zlata**, and **Bora King**.

**Background**

*Raphanus sativus*, the humble radish, is a member of the Brassicaceae family like broccoli and brussels spouts. But unlike the much-maligned sprouts, radishes seem to be globally enjoyed. Radishes originated in South East Asia, and are now grown all over the world and represent 2% of all crops grown for harvest.<sup>1</sup>

Radishes are fast growing with seed germination in 3–4 days and crop maturation in four weeks for most varieties when soil temperatures are between 65–85°F. With cooler temperatures, both germination and maturation take longer. Mild coastal weather permits plantings almost all year round. Multiple harvests can be enjoyed from early spring to late fall. Some people plant consecutively every two weeks to ensure a continual harvest.

Radishes have an odor that is unappealing to certain insect pests including aphids, cucumber beetles, tomato hornworms, squash bugs, and ants. If you have a problem with any of these pests, consider companion planting with radishes.

Radishes are low in calories (20 per cup!), but high in nutrients (potassium, vitamin C, folate), fiber and flavor.<sup>2</sup> Both the radish root and greens are delicious, cooked or raw. Three recipes, encouraging culinary creativity with radishes, can be found at the end of this article.

Both **Amethyst** and **Bora King** are hybrids meaning that they are the offspring of a deliberate cross between two parent plants. **Red Head** from the Netherlands and **Zlata** from Poland are heirloom varieties. The University of California, Davis (via the Master

Gardeners of Sacramento County) defines heirloom as, "...an open-pollinated variety that has been passed down at least 50 years through several generations in a family, ethnic, religious, or tribal group, or was commercially introduced before 1940."<sup>3</sup>

Even though **Bora King** is a hybrid, the cross has been stabilized over several generations, and is now open-pollinated like **Red Head** and **Zlata**. Seeds from open-pollinated plants produce offspring identical to the parents. Seeds saved from hybrids do not produce offspring 'true to type', that is, like their parents.

Regardless of parentage and pedigree, all varieties required the same seed depth at planting, seed spacing, and soil temperature for germination and thinning.

## **Methodology**

February, 2014

Approximately 6" of compost was worked into the soil of one 4'x8' raised bed at Elkus Ranch, in preparation for the radishes.

March 20

Eight rows of radish seeds were sown 1/2" deep in loose soil. These included two rows each of **Amethyst Hybrid**, **Red Head**, **Zlata**, and **Bora King**. Irrigation was set up on two lines running lengthwise up the bed. Rotating water emitters were programmed to run for 15 minutes every day for two weeks. After that, the water was reduced to 15 minutes every other day.

March 27

Great germination in all eight rows. First gentle thinning. (Sprouts were delicious)

April 3

All varieties healthy looking with robust green vegetation. Thinned to 1" apart. (More delicious sprouts). Reduced watering to 15 minutes every other day.

April 10

Thinned all radishes to 2" apart. There were 1.5"-2" immature roots on the **Bora King** thinnings. (Truly, they were rather bitter.)

April 17

Exactly 4 weeks after planting, harvested full size **Amethyst**, **Red Head** and **Zlata**, representing about half of the crop of those three varieties.

April 24

Harvested the remaining half of the crop of **Amethyst**, **Red Head** and **Zlata** and a few **Bora King**.

May 8

Finally able to harvest the **Bora King** radishes after 49 days.

The Elkus work crew and their families were the official radish tasters for the study.

Actual temperatures, both high and low in the Bay Area, were 2–3 degrees higher than historical averages for the months of March, April and May. Daytime highs were in the low to mid 60s and the lows were in the low 50s.<sup>4</sup>

## Results

It must be noted that the water pressure at Elkus for the first couple of weeks, was irregular. Luckily, this did not seem to impact germination or vitality of the radishes.

The **Amethyst** seeds produced perfect 1” globes with strikingly beautiful purple skins. The flesh was crisp and white. The tasters enjoyed the mild, radish flavor. They were enjoyed both cooked and eaten raw.

The **Red Head** seeds also produced lovely 1” globes. These were bicolored, red fuchsia crowns with bright white bottoms. Again, these were enjoyed both cooked and raw.

The **Zlata** seeds produced plum shaped roots around 1.5” in diameter. The beige colored skin was delicate and the flesh on the inside, white. The tasters concurred that this variety lacked flavor in both raw and cooked forms, but did have a lovely appearance on a crudité platter.

The **Bora King** seeds produced roots that were 6”–7” long, while avoiding the pithy core that often accompanies radish roots of that length. The plum colored roots varied in shade, adding to their beauty. The stems also showed some purple. Flavor was consistently good, with more of a radish kick than either the **Amethyst** or **Red Head** varieties.

Some of the leaves of the **Bora King** radishes had small holes 1/16” in diameter—they were, probably, caused by the “flea beetle” which describes a number of species from the Chrysomelidae family. The roots of the radishes were unharmed.

None of the radishes were diseased. With the exception of minor leaf damage in the Bora King, leaves in all four varieties looked healthy. Productiveness was subjectively determined by radish germination and harvest. The Elkus research team provided the assessment of taste in each variety.

**Table 1 Vitality, Productiveness, Taste and Appearance**

Variety	Vitality/Disease Resistance	Productiveness	Taste	Appearance
Amethyst	excellent	excellent	Mild	Bright and Stunning
Red Head	excellent	excellent	Crisp	Lovely Two Tone
Zlata	excellent	excellent	Dull	Beige color
Bora King	Some leaf damage	excellent	Peppery	Various reds—purples

The days to germination and harvest were accurate to the numbers listed on the back of each seed pack.

**Table 2 Days to Germination and Harvest**

Variety	Days to Germination	Days to Harvest
Amethyst	Less than 7 days	28–35 days
Red Head	Less than 7 days	28–35 days
Zlata	Less than 7 days	28–35 days
Bora King	7–14 days	42–49 days

## Conclusion

The fast growing, hearty, beautiful, and delicious **Amethyst** and **Red Head** varieties would be great choices with which to begin or add to your current garden. They are also a perfect introductory vegetable for children or novices to grow and their short roots lend themselves to container gardening.

The unusual pale skin of the **Zlata** is all that was recommended by the tasters.

The longer days to harvest of the **Bora King** exposed them to the pests and increased potential for damage. This would be something to bear in mind when planning on a fall crop of radishes as the shorter day light hours and cooler temperatures will result in longer germination and maturation times and subsequently greater potential exposure to pests. The **Bora King** may perform better in warmer inland climates where they would reach maturation sooner thus avoiding potential insect damage and/or exposure to disease.

For more information, please contact the Master Gardener Help Line at (650) 726-9059 ext. 107 or email your questions to: [mgvhelpline@ucdavis.edu](mailto:mgvhelpline@ucdavis.edu)

## Recipes: The Raw and the Cooked

If you are like most Americans, you have only eaten raw radishes, most likely in salads or on a crudité platter where they are smothered in something called ‘ranch dressing’. Here are other things to try.

### Open Faced Radish Sandwich

Spread cream cheese (or mayonnaise or butter) on a slice of bread or bagel. Layer with overlapping slices of radish. Add salt and pepper to taste.

## Sauteed Roots and Greens

Melt 2 Tbsp. of butter or ghee in a saucepan. Add 2 cups sliced radish root and cook for 5 minutes stirring occasionally. Add chopped radish greens and cook for an additional minute. Salt and pepper to taste.

## Radish Pasta Root to Leaf

(Recipe adapted from *Eat Your Vegetables* by Joe Yonan)

¼ cup pine nuts or walnuts

16 radishes with greens

12 oz. pasta

1/8 lbs. butter (1/2 stick) or 1/3 cup olive oil (or combination)

2–4 garlic cloves, finely chopped

1 large onion, halved and thinly sliced crosswise

zest from 2 juicy lemons and ¼ cup lemon juice

sea salt and fresh ground black pepper

liberal grating of Parmigiano or Reggiano cheese

1. Toast pine nuts (or walnuts) in small skillet over medium heat for 2 minutes. Shake pan often. Transfer to a plate to cool. If using walnuts, chop into smaller pieces when cool.
2. Halve the radish root to tip, and slice into 1/4" thick half circles. Stack radish greens and roll lengthwise into a tight cylinder. Slice crosswise into thin ribbons.
3. Bring large pot of water to boil. Add 1 Tbsp. salt and pasta. Cook al dente according to package instructions. Drain, reserving ½ cup of pasta water.
4. While the pasta is cooking, make the sauce: Add butter or olive oil to a large skillet over medium high heat. After one minute, add garlic and onion. Cook until soft, stirring often, about 4 minutes.
5. Add radish root and reduce heat to medium low. Cover skillet and cook until radishes become tender, about 5 minutes. Remove lid and stir in radish greens. They will wilt in 1–2 minutes.
6. To the radish mixture add the drained pasta, lemon juice and zest, sea salt and pepper. Cook a couple of minutes, have a taste and adjust seasonings
7. Serve sprinkled with pine nuts or walnuts and grated Parmigiano or Reggiano cheese.

## References Cited

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<sup>1</sup> Dixon, Geoffrey R. (2007). *Vegetable Brassicas and Related Crucifers*. Crop Production Science in Horticulture. Volume 14. CAB International. ISBN 978-0-85199-395-9.

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<sup>2</sup> "Radishes, raw"nutritiondata.self.com. Retrieved 2014-07-15.

<sup>3</sup> [http://ucanr.edu/sites/sacmg/What\\_are\\_Heirloom\\_Tomatoes/](http://ucanr.edu/sites/sacmg/What_are_Heirloom_Tomatoes/)

<sup>4</sup> <http://www.accuweather.com/en/us/san-francisco-ca/94103/march-weather/347629?monyr=3/1/2014>