1. Colorado potato sales totaled nearly $250 million in 2011—making potatoes tops among all fruits and vegetables in Colorado and the state’s No. 7 commodity overall.

2. In Colorado, the San Luis Valley is spud hub. The majority of potato acreage here—about 60 percent—is planted in varieties developed by Colorado State University’s Potato Breeding and Selection Program.

3. The San Luis Valley Research Center is home base for CSU’s potato program. Meet the tater team: Rob Davidson, from left, center manager and specialist in seed potatoes and potato certification; Dave Holm, potato breeder; Sastry Jayanty, authority on post-harvest physiology and storage; and Samuel Essah, expert in potato production, physiology and storage.
4. Dave Holm — email name, “spudmkr.” He leads the Colorado Potato Breeding and Selection Program. The program has released 28 varieties since it began in 1979 — impressive, because it takes 14 years to create a new type of potato. These cultivars have been developed just for Colorado’s environment and markets, with emphasis on yield, sustainability, improved quality, flavor, and human-health benefits.

5. The CSU potato program is a model for its successful work with state growers. In fact, the Colorado Potato Administrative Committee, which represents growers, supports CSU potato research to the tune of about $250,000 a year.

6. Caroline Gray, a research associate at the San Luis Valley Research Center, works in a greenhouse with potatoes primed for cross-pollinating. The CSU program uses traditional plant-breeding methods; these spuds are not genetically engineered.

7. Gray removes anthers, or male parts, from the flower of a potato plant to collect their pollen. This is a male parent.

8. Now Gray applies pollen from the male parent to the stigma of the female parent. Anthers have been removed from the recipient flower to avoid potential pollen mixes. This way, crosses with desirable progeny can be identified and repeated.

9. Rob Davidson examines microtubers stored long-term for use in tissue culture. This material contains traits that might be useful in future potato breeding.

by Coleman CORNELIUS
10. These plantlets, held by Carolyn Keller, have been propagated through tissue culture. Tissue culturing occurs in the sixth year of the potato-breeding process, when researchers have distinguished a potential new cultivar—called an “advanced selection”—and are working to perfect it for seed certification.

11. Want a tasty tater? Dial up Sastry Jayanty. Here, he collects volatile compounds from a potato. These compounds contribute to a potato’s flavor through a specific aroma profile. Jayanty’s volatile testing adds to potato research, with the aim of producing more flavorful potatoes.

12. Want a healthy tuber? Call Tatiana Zuber. She recently earned a doctoral degree in horticulture and examined the cancer-fighting antioxidant compounds in potatoes with colored flesh. These include the Purple Majesty, a popular specialty potato with vivid purple pigmentation, which CSU released in 2005.

Here are two popular CSU potato varieties that drew special attention during the 2012 growing season:

13. Mountain Rose, released in 2005, is a specialty fresh-market variety with red skin and light-red flesh. It’s a multipurpose potato that’s high in antioxidants. Holm has developed pigmented potatoes by introducing wild and heirloom potato species during breeding.

14. Sangre, released in 1982, is a fresh-market variety with red skin and white flesh. It’s a flavorful spud that stores well and is good for boiling and baking.
15. Presenting the 2012 White House Kitchen Garden, featuring potato varieties Sangre, Mountain Rose and Canela Russet. That’s right, First Lady Michelle Obama and a group of schoolkids planted the three varieties in the First Garden last spring. All three were developed by the CSU Potato Selection and Breeding Program. Just another sign that our taters are tops!

The CSU potato program is now introducing two new varieties – called Masquerade (16) and Crestone Russet (17) – with at least one more new variety waiting in the wings for naming and release in the coming year. Look for them at a gardening center or market near you!

Sources: Colorado Department of Agriculture, Colorado Potato Administrative Committee, Colorado Potato Breeding and Selection Program, Obama Foodorama. Photographs by Dan Bihn, Colorado Potato Breeding and Selection Program, and Eddie Gehman Kohan/ObamaFoodorama.com