

# FACT SHEET

National Clean Plant Network



Start clean, stay clean.

## Benefits Of Using Virus Tested Planting Stock

Virus diseases are one of the most important production constraints facing sweetpotato producers. In the US, four viruses are common; each is very similar to the most common, *Sweetpotato feathery mottle virus* (SPFMV). Yield, skin color, shape and quality of storage roots can be greatly reduced when sweetpotatoes become infected with these viruses. Yield reductions can exceed 40%, and cracks may develop in the roots making them unmarketable. Often 100% of plants in a field are infected by



the end of one growing season. Many sweetpotato viruses are vectored by aphids and whiteflies. These insects can be carried on machinery and the wind, and are responsible for spreading viruses both short and long distances.



### Clean stock is the solution

Planting clean, virus-tested plants can help mitigate the issues caused by sweetpotato viruses. The first clean seed program for sweetpotato was started in the 1960s in California. At that time, it was well known in the industry that new seed stock was required to prevent Russet Crack and “variety decline,” or the gradual loss of yield that occurred in many varieties. The use of virus-tested seed is one of the reasons for substantial sweetpotato yield increases. Clean material, coupled with higher yielding, disease-resistant varieties has resulted in marked increases in yield in recent decades. In 1967, average yields in California were 5 tons/acre; in 2001 average yield had more than doubled to 12 tons/acre.

Sweetpotato clean seed programs are established in California, Louisiana, North Carolina, and Mississippi. Other sweetpotato producing states are interested in developing clean seed programs.

### The Southeastern Experience

Today, North Carolina is the leading producer of sweetpotato in the United States. In the 1990s, prior to implementing seed programs, the sweetpotato crop in North Carolina was devastated by a virus disease, – Russet Crack, reducing yield 50% in affected fields. In Louisiana yield decline was up to 40%. In response, the Micropropagation Unit at North Carolina State University and the LSU AgCenter virus-tested seed program were started in 1999 to “clean up” and provide clean seed and plant material to growers. Simultaneously, both states began programs to certify sweetpotato plant material. Due to the fact that the use of certified seed varies greatly between states, NCPN education and outreach efforts are focused on educating sweetpotato producers about the value of using certified planting material.

### Yield Comparison of Clean vs. Virus-Infected Sweetpotato

Clark, C.A. and Hoy, M.W. 2006. Effects of common viruses on yield and quality of Beauregard sweetpotato in Louisiana. Plant Dis. 90:83-88

Planting stock of Beauregard in Louisiana	Yield, expressed as the number of units/acre			% Yield reduction
	60-lb bu/A	50-lb bu/A	40-lb boxes/A	
Clean Stock	471	565.2	706.5	NA
Stock infected with SPFMV-Russet Crack strain	422	506.4	633	-10%
Farmer's Plant A (infected with SPFMV + other viruses)	327	392.4	490.5	-31%
Farmer's Plant B (infected with SPFMV + other viruses)	260	312	390	-44%
Farmer's Plant C (infected with SPFMV + other viruses)	281	337.2	421.5	-40%

## Testimonials



"Having clean healthy plants and seed has increased yield and pack-out for us and our customers. The clean seed program is a MUST HAVE for us to produce high quality and yield, to supply the growing demand for healthy great sweetpotatoes." Jim Jones, Jones Family Farms, **North Carolina**.



"Garber Farms grows over 1,000 acres of sweetpotatoes annually. Our average yields over the past 10 years has steadily increased to around 675 bushels per acre. The Foundation seed program provided by LSU AgCenter has been the core input of our production practices. Its ability to provide Garber Farms with

a viral and disease free, "clean plant" product has allowed our transplants to have the potential to produce higher yields. The future of our sweet potato industry is directly dependent on the continuation of LSU's Clean Plant Program." Matthew Garber, Sweetpotato grower, Garber Farms, **Louisiana**.

"In 2016, we grew foundation and older sweetpotatoes next to one another in the same field. The foundation sweetpotatoes yielded 100 bushels per acre more in the same field." Wade Fleming, sweetpotato producer, Calhoun County, **Mississippi**.



"The cleaner the seed, the less virus you'll have, and the more saleable product you'll have." Matt Alvernaz, sweetpotato grower, Merced County, **California**.

### Why use clean seed?

The simple answer is to increase yields, quality and profit. Incorporating clean seed into on-farm seed programs has been shown to increase yields by 15% or more. Quality is also improved, which improves marketability of the crop in both fresh market and processing sectors of the industry. Increased profitability through higher yields and improved quality directly relates to long-term sustainability and crop improvement for the sweetpotato industry and ultimately the United States farm economy.



"Clean seed improves yield, quality, shelf life, and packout efficiency of our sweetpotatoes. Yield is 10-20% better with clean seed. Quality makes the produce buyer's business more efficient and pleases their consumers. Sweetpotatoes harvested from clean seed last longer in

storage bins. Clean seed sweetpotatoes require less labor to pack. With clean seed we have first class yields; no excuse, top quality; good shelf life; and a smooth packing operation." Duane Hutton, sweetpotato packing shed manager, Livingston, **California**.

### About NPCN-Sweetpotato

THE NPCN – Sweetpotato is an association of clean plant centers, scientists, regulators and growers concerned with the health of sweetpotato planting stock. It joined the NPCN specialty crop network in 2015.

[www.ncpnsweetpotato.org](http://www.ncpnsweetpotato.org)



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