



# Opportunities in okra, sweet potatoes

B.C. vegetable growers learn about okra and sweet potato production from a research scientist based in Ontario

BY TOM WALKER

If you are looking to diversify your crops, consider okra and sweet potatoes, says Viliam Zvalo, a research scientist in vegetable production with the Vineland Research and Innovation Centre in Ontario.

While common in warmer climates, both vegetables are being grown successfully in Canada and show good market potential, Zvalo told growers at the recent B.C. Horticulture Show.

“When you walk through the vegetable aisle at your local supermarket, it is markedly different from what it was even five years ago,” Zvalo says.

That reflects the evolving Canadian population. A change in demographics driven by immigration is creating an opportunity for Canadian farmers.

“Two million more new Canadians will come to Canada by 2020,” Zvalo says.

He says studies by the University of Guelph show that 70 per cent of the growth in sales in

the vegetable aisle will be to immigrants. Those new Canadians bring a broad range of tastes with them and Canadians at home are becoming more adventurous in their eating as well.

“That creates opportunity,” Zvalo says.

Okra is the seedpod of a flowering plant of the mallow family, Zvalo explains. Canada imported 6,000 MT (13 million lbs.) of okra in 2015, a nearly 50 per cent increase over the last five years and Zvalo expects a continued increase of eight per cent annually. It is favoured by consumers of South Asian, Middle Eastern, and African backgrounds, who use it in soups, stir fries and stews. Okra has a limited shelf life and Zvalo believes there is a market for local, high quality product.

Okra needs 150 frost-free days to mature. It can go on to produce for 10 to 12 weeks, especially with the support of row covers. Okra is direct seeded after soaking, or transplanted, under black plastic mulch. Zvalo says there is

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ABOVE

Okra is the seedpod of a flowering plant of the mallow family.

delayed maturity and about 12 per cent less yield with seeding.

"But it has an extremely fragile taproot," he cautions. "You have to be very careful with transplanting."

Spacing is critical for maximum yield, Zvalo adds.

"We found the highest yield on double row 30 cm spacing, 25 to 30 cm seems to be the sweet spot."

Initial work has shown 40 to 60 kg N/ha gives the best yield with decline above 75 kg/ha.

"About half of that up front," Zvalo suggests and three to five kg/ha a week through drip irrigation.

Zvalo says verticillium wilt is the most common disease.

"Get your soil tested," he says. "If you have potatoes in your rotation, the risk is high."

Japanese beetle is common but doesn't do a lot of damage, Zvalo says. Look at products registered for Group 8 crops.

"I think 8 MT (17,000 lbs) per hectare (7,000 lbs per acre) needs to be exceeded before growers would be interested," he says. "That's the go/no go level."

Some producers are seeing 20 MT/ha (nearly 18,000 lbs/acre) in southern Ontario. Growers should consider high yielding hybrids. Lucky Green, Elisa, and Jambalaya did best in trials.

The immature seedpod is harvested by hand within five to seven days of pollination. Pickers have to be quick as okra becomes fibrous and woody rapidly and over-ripe pods need to be picked and discarded.

"You will need one person dedicated to harvest one acre and it will take them all day," says Zvalo. "If they have any time left over, then they could help with other chores."

The cost of production is \$5,750 per acre, he estimates.

"A few years ago, when returns for non-hybrids were in the \$0.99 lb. range and yields were lower, it was difficult to make a business case," says Zvalo. "Now, with prices like \$2.99 to \$3.99, if you can get 10,000 lbs. to the acre you should be able to make money. It could be the next kale"

#### It's a sweet potato

"No they aren't yams," says Zvalo, referring to the name of the popular fries. It seems that grocers adopted the name yam to distinguish the darker orange/yellow sweet potato varieties that arrived on shelves after the white-fleshed

types had been established in North America.

The sweet potato crop in Ontario has grown from just over one million pounds (450 MT) to 30 million pounds (14,000 MT) in the last 15 years but that's not much compared to the 110 million pounds (50,000 MT) imported each year.

Vineland has been working since 2009 to develop a line that would be more cold tolerant with a shorter growing season so the crop would mature in the fields, says Zvalo. In 2015, they conducted yield trials at multiple sites in P.E.I., Nova Scotia, Ontario, Manitoba, and B.C.

"We have a variety that will probably be launched by 2017," he says.

It has about a 40 per cent higher yield.

"I have a grower in Nova Scotia who says he would switch over all of his 50 acres if it was available."

Well-drained, light sandy loam soils with a pH range of 5.5 to 6.8 are best. Heavy soils produce low quality roots, says Zvalo. Double rows 12 inches (30 cm) apart with plants 12 inches in the row in plasticulture and 36 to 42 inch (90-105 cm) row spacing is ideal. He recommends sweet potatoes for a three to five year crop rotation.

Sweet potatoes don't like frost, so they can only be planted after the risk has passed. Slips are placed two-thirds in the ground with about 10,000 to 14,000 slips per acre.

"I always tell growers not to look at their slips for about two weeks after planting," Zvalo says. "They can look pretty rough and may die back, but the two-thirds under the ground is sprouting."

Zvalo says their trials showed

that black plastic mulch and trickle irrigation increased yields by 30 to 40 per cent.

Sourcing slips is a challenge. Ontario growers can get overnight delivery from North Carolina, but that will be harder for other parts of Canada.

Nitrogen needs are about 60 to 90 kg/ha with one-third at planting and 5 to 7.5 kgN per week until the end of July. High potassium is important (60-180 kg K<sub>2</sub>O/ha) as well as zinc, sulphur, boron and manganese, all applied through the drip.

There seems to be low insect pressure in Canada, Zvalo says, but wireworms are a problem.

"If you have wireworms in your soil and you haven't treated it, don't plant it," he says. "Wireworms love sweet potatoes."

Harvest averages 100 to 120 days after planting. Zvalo says they found almost double the yield difference between Aug. 15 and Sept. 15.

"They will take some light frost and that final month is critical for yield," he says.

Care must be taken with mechanical harvesting as the thin skin is easily damaged. A protective cork layer develops over the entire root surface during the curing process. Two weeks at 26 to 32 C with 90 per cent humidity sets the skin and allows the root to develop its sweet flavour.

"But make sure you let off the carbon dioxide," Zvalo cautions.

Sweet potatoes can be stored for up to 18 months at 10 to 12 C and 70 per cent humidity.

"But realistically, local growers are sold out by February," he says. "At \$2 to \$3 a pound at farmer's markets."

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