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Published subheading: “**The home garden poses far more of a risk to our environment than genetically modified plants, says JON SULLIVAN.**”

The MegaSprout™, a brussell sprout genetically modified to be herbicide resistant and taste like avocados, has escaped from experimental plots and is spreading across Canterbury. It is quickly becoming a weed on Canterbury farms and is out-competing native plants in the high country. There is public outcry and government ministers are diving for cover. The Green Party is trying not to look smug.

This unlikely scenario has not happened. I made it up because I dislike brussell sprouts. And because more and more of our favourite garden plants are doing exactly this every year, jumping the garden fence and becoming weeds. I find it odd that so many people get emotional about the environmental risk of genetically modified crops yet are unconcerned by the greater environmental risk posed by many of the non-native plants in their gardens.

Garden plants from distant places like Europe or Asia are just as foreign to New Zealand as a genetically modified brussell sprout. There is nothing natural about thousands of these plants suddenly growing wild in once-isolated New Zealand. For my money, a garden plant gone wild is much more likely to become a bad weed than any souped up brussell sprout.

Why worry about garden plants gone bad? Existing weeds are estimated to cost over \$100 million nationally in control, prevention, and lost earnings. Also, today’s weeds, especially those threatening conservation lands, are mostly our grandparents’ favourite garden plants. Many more are coming.

Before you all go out on a rose-killing rampage, I should say that most garden plants have not jumped the garden fence. Of those that have, a minority (several hundred) is

now bad enough to be weeds listed and controlled by a production industry or government agency. Most roses stay where they're planted, looking pretty.

Lincoln University and Landcare Research are piecing together the history of which garden plants have become weeds, when, where, and why. We hope to be able to get one step ahead in the weed making process, enough to allow biosecurity officers to stop the worst new weeds while it is affordable to do so. The trouble is that popular garden plants widely planted for a long time have the highest chance of being wild and getting onto weed lists. The ecology of a plant is of secondary importance. In our land with a benign maritime climate, all manner of plants are spreading out from gardens.

We cannot yet reliably pick future weeds from a lineup of garden plants. So nurseries cannot guarantee their plants are environmentally safe (they do cooperate with the National Plant Pest Accord to not sell known weeds). Also, some of your garden plants may become your grandchildren's equivalents of old man's beard or bone-seed, two nasty weeds of conservation land.

New Zealand already contains at least as many wild exotic plant species as native species (just over 2,000 species of each, ignoring lower plants like mosses and liverworts). Most of the wild exotics are ex-garden plants. You don't notice most of them yet because they escaped from gardens in the last few decades and are still decades away from becoming widespread. Nature takes time. Even the dreaded bush-eating, bovine-Tb spreading possum took nearly a hundred years of being released by people to become abundant enough to be a recognised pest.

The rate at which garden plants are jumping the fence is showing no sign of stopping. If anything, these rates are increasing. Currently, about 15 plant species are discovered wild for the first time each year. Almost all are garden plants, usually species that have been planted for at least several decades. History tells us to expect 10–15% of these to become future weeds. That mean two new weeds species are escaping from our gardens every year.

What can we do? Quite a lot. Future weeds are our garden plants. They usually show up wild first in or near our gardens. They are initially spread about the landscape by us, moved in pots or as dumped garden waste. If we act quickly when we first notice new wild plants, we can slow the weed invasion considerably. Just a few simple gardening practices would make a world of difference.

This is what I think of as gardening responsibly.

- Know your weeds. Don't grow known weeds and get to know the weeds on Environment Canterbury's potential pest list. Let them know if you find one.
- Dispose of your garden waste within your own garden or at a green waste disposal centre.
- Remove all non-native plants that show up wild in your garden, however attractive they are. If you don't know what it is, pull it out.

- Don't give away or accept non-native wild plants (e.g., natural seedlings). Think carefully before moving plants long distances. The plant itself might be OK but what seeds are in the soil?
- If you see a plant spreading aggressively through your garden, find out what it is and destroy it. If it is not a listed weed, warn Environment Canterbury or the Landcare Research herbarium about it.
- Plant old-fashioned exotic species that have been well-behaved for many decades. Include native plants to your garden.

You might see this as a story of doom and gloom. New weeds will undoubtedly have detrimental impacts on future production and conservation in New Zealand. I expect future generations will come to celebrate their more colourful and diverse, yet less uniquely New Zealand, wild environment. Either way, our choice has already been made. If we want gardens of attractive foreign plants, our natural landscapes will gradually fill with non-native plants.

Military analogies are often used in biosecurity. When it comes to the invasion of New Zealand by weeds, we will lose the war. Too many of us have been aiding the enemy for too long. But we can win some battles. If we pick our fights carefully and work together, I am confident we can stop many of the worst future weeds. The first step is gardening responsibly.

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