

urban plotting



Brad Collis visits a Canberra scientist whose city garden offers relief from the monocultures of modern agriculture.

Every day Richard Stirzaker tends his garden. He breathes its scents, rubs its soil between his fingers, and celebrates its harvests: the first raspberry of summer, the first snow pea of spring, the first cob of corn, the first ripened peach.

For Stirzaker, scientist and philosopher, this is the cadence of life; living with the seasons through wet and dry, the grey and sunbaked; knowing without calendar or computer where he is in nature's frame.

Perhaps it's nostalgia for a simpler past, but he is convinced that something fundamental goes missing from people's lives when they separate the process of growing, especially food, from the process of living.

'When it's time to plant I simply can't sleep until it's done,' he says of his passion to till soil and sow seeds – in the middle of a city.

The outcome of this green-thumbed obsession is one of the most remarkable suburban gardens in the country. On a standard 850-square-metre block in the Canberra suburb of O'Connor, Stirzaker harvests almost enough produce during its peak to fill a small supermarket – or at least its fruit and vegetable shelves on a day. It keeps he and his family, busy and self-sufficient, but there's more to the exercise than an enthusiasm for horticulture.

His front and back yards are also his laboratory. It's where he puts into practice his ideas as a soils scientist with CSIRO Land and Water, and his personal philosophies on the need to be a part of nature's cycling of life.

As a scientist grappling with some of the most alarming land and water issues facing the country it has been impossible for him to avoid noticing the obvious – that the most serious 'sustainability' issues have



Blue and white flowers can have a cooling effect in a hot, summer garden.

arisen where food production has become a large-scale, mechanised factory. On these treeless, laser-levelled, irrigated horizons everything possible is done to negate nature's influences in the interests of product uniformity, shelf-life and the 'bottom line'. Fruit and vegetables have never been cheaper, but they are grown an agribusiness world in which a perfectly tasty bean will be rejected because it is bent, or vast tonnages of fruit such as apricots are picked firm, before nature has added their *raison d'être* . . . the flavour.

'Everything is going monoculture, large scale and efficiency-driven, but what happens if you want to go the other way and produce as much food as you can around your own back door?' he asks.

The question is also driven by Stirzaker's work in developing countries, especially Africa. What happens to these communities if there is no place in the global economy for the small-holder farmer?

Stirzaker has decided to use the Aussie backyard as a testing ground for his ideas and to create a template for others who might like to follow. His efforts, not surprisingly, bestow a degree of eccentricity on the house's suburban facade. In a city where front fences are outlawed, the house has gradually disappeared behind a wall of green; the front and side boundaries now a line of espaliered fruit trees.

'Fruit trees take up space, so this is an ideal way to grow them: the perfect hedge,' he says, as he begins a garden tour.

'The beauty of having your own fruit trees is you can enjoy varieties that simply can't be bought in shops anymore. And that to me is one of the big issues.'

He arcs his hands across the front of his 'hedge' like a painter displaying a mural.

'Blood plums, nectarine, plumcot – which is part plum and part apricot and beautifully aromatic, – apricots, white peach, yellow peach, pears, nashis, yellow-flesh plum, cherries, golden delicious apples . . .'

The fruit trees are the only food crops in the front garden, which is primarily a forest of flowers. Butterflies flit among tall, tangled stems and the hum of bees and other winged insects envelop the yard with sounds of the countryside. Close your eyes, breathe deeply and the suburb, the modern world of roads and cars, is gone.

Richard's wife Mary, a Canberra doctor, planted the flowers, primarily for colour and a sense of comfort.

'As we move into the hot season the colours are white and blue to cool the garden down,' Stirzaker says. 'There's nothing worse than walking out on a hot day among flowers that look like fire. But when you walk into a lush garden with

blues and whites you feel cooler. I once would have said bunkum, but it really is true. And then in winter and spring we have the reds and yellows.'

The block faces east-west, so the whole garden has been designed to catch as much sun as possible. 'What I've really enjoyed is using trellises to create niches all through the garden,' Stirzaker says. 'So on our north-facing side we have grapes up above the fence-line.'

The fruits continue along the northern boundary to the backyard where the grapes meet a grove of raspberries. This corridor of dark green smudged with red, ripening fruit, opens into a pergola draped in kiwi fruit. This abuts another niche and the start of the vegetables precinct. It begins beside a chook run and features elevated beds to give spring seedlings a head start by being off the chilled post-winter soil.

The raspberries and kiwi fruit are against the back fence and the area from here to the house is divided into intensively-farmed plots producing an extraordinary array of vegetables: tomatoes, corn, capsicum, several types of potatoes, zucchini, beetroot, lettuce, shallots, leeks, cucumber, silver beet, carrots, cauliflower, brussels sprouts, spring onions, eggplant and beans.



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Narrow, winding paths separate the plots and each path always finishes at a small bare area, which Stirzaker calls his outside rooms ... small clearings where he can sit and enjoy the garden's different views at different times of the year.

On the southern boundary is a former garage that has become a soils laboratory opening into a glasshouse. This is used for early and late fruit to fill in the seasonal gaps.

The glasshouse has also allowed Stirzaker to test the garden's versatility, even in a highlands climate where winter temperatures nightly drop below zero. In tubs that can be wheeled out in summer and returned for the winter he is trying his hand at Mediterranean and tropical fruits that would be the envy of gardens a thousand kilometres to the north: mandarins, avocados, apricots, oranges, pawpaw, guavas and even a coffee tree.

The big catch, however, with all this backyard production is that growing is only part of the picture.

'You have to be as good in the kitchen as you are in the garden, and I confess that's my weak point,' Stirzaker says.

'People who lived like this in the past knew how to process. We have to learn again, and processing is a communal activity. It needs people sitting around a table peeling, chopping and bottling.'

Nonetheless, Stirzaker says his passion for backyard farming continues to rise because he feels there are big questions at stake: 'Is there an alternative to the way we have divorced our living from food production? If so, there is the question of lost skills, which need to be regained.'

One of those skills is pest control in an unbalanced environment, which means negotiating an awkward compromise

between productivity, the ideals of organic gardening, and intervention with pesticides.

Also, a broadacre farmer inside an air-conditioned tractor can work safely with chemicals, but the backyard farmer measuring a few teaspoonfuls of poison into a spray can be taking a risk. The family has decided to strike a deal with nature, pulling out the chemical weapons only as a last resort.

'Essentially you have to decide what level of damage you are prepared to tolerate, and that's the dilemma,' Stirzaker says. 'Some of the most damaging larvae grow into the most beautiful butterflies.'

'We've decided that a pest that takes up to 10 per cent of a crop is welcome. Therefore we are quite happy for the parrots to eat apples, because the local variety always eat a whole apple, not bits from every apple. It means we can enjoy having the parrots around.'

'There is also a beautiful big butterfly whose larvae attacks our citrus trees. But it only seems to reduce the crop a little so that's okay too because we like the butterfly. It makes the deal worthwhile.'

'Similarly, there's a virus that knocks out a percentage of the tomatoes each year. Again, I'd rather tolerate some losses than spray everything.'

But Stirzaker concedes there are some pests that simply have to be hit with off-the-shelf pesticides, particularly coddling moth in apple trees, spider mites on the beans and the cabbage white butterfly.

'Some people expect a backyard farm to be organic, but as much as we would like this, it's not possible. The world and what we think is natural, has moved on. I constantly find myself in the middle of the debate between those who believe that if humans would just pull back a little everything in nature would fall back into a marvellous harmony, and those who believe humans should be the master of nature.'

'Well, this garden is somewhere in the middle because the world has moved away from what was once "the natural" and we can't go back. I hear organic farmers promoting their systems, which are important because of the alternative they offer, but they are out of town and the snails and other pests haven't reached them yet. But they will, and then what?'

'If you want a productive garden it inevitably means some intervention to control some bugs.'

In the main Stirzaker believes bugs are basically a part of the scene and just need watching. The main issue, and the prime task he has set himself, is to establish the knowledge required to make backyard farms sustainable, both ecologically and economically.



The old garage now serves as a soils laboratory that opens onto a glasshouse.

'It's no different to the issues facing the broadacre farmer – just a different scale,' he says.

'As we have seen in large scale farming, anyone can be productive for a short period of time: bang on the fertilisers, spray your pests and turn on the sprinklers. But how do you manage when you've come through that phase? How do you keep the whole system going, once you've started and you can't just keep spraying and watering?'

This is the area in which Stirzaker the scientist and Stirzaker the amateur horticulturist have come together.

'Sustainability is still all about managing your nutrient and water inputs so that biophysically your garden is not exceeding the land's capabilities,' he says.

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'Vegetables need fertile ground and lots of water, so the two weakest links are the need to always be digging the soil, which attracts weeds, and the amount of water and nutrients we lose.'

Stirzaker now feels he is close to having a system that resolves this for the aspiring backyard farmer. His strategy is to incorporate what he calls 'conserving' and

'recycling plants': plants not planted for food, but put there to do a job.

So instead of tilling, he plants vegetables such as tomatoes direct into a carpet of sub-clover that grows in winter and dies down in spring. The dry mat conserves soil moisture and acts as a barrier against weeds looking for somewhere to root. As a result, the tomatoes need less weeding and less water.

Clover is one of the garden's 'conserving' plants. Then there's the recycler – lucerne – which is planted in strips down the side of each vegetable patch. The lucerne's deep roots capture and store nutrients that leach below the vegetable crop's root layer. It is cut regularly and used as a mulch around the vegetables.

Lucerne also attracts aphids away from the vegetables, alleviating the need to spray. This allows ladybird numbers to build up and keep the aphid population under control. The lucerne also minimises the weed invasion that generally occurs between crops because its deep roots dry out the soil, making it harder for weeds to establish.

'I've basically been designing a backyard farming system that mimics the native ecosystem through reduced tillage, recycling garden nutrients, and using

lucerne to dry out the soil after the crop has been picked,' Stirzaker says.

For smaller yards where space is a premium, clover and lucerne strips might not be practical, but the main aim is better nutrient and water management, regardless of the size of the garden. Stirzaker says a compost and chook run are another way to recycle nutrients and maintain soil quality.

It is barely 50 years since backyard food-growing was the norm in Australian towns and cities, and for the majority of today's generation the supermarket is likely to remain the preferred source of produce.

But Richard Stirzaker, while not intending to be a prophet of doom, has an inkling that the highly efficient, large scale horticultural operations that most people are relying on, may have trouble sustaining their current practices and outputs.

He feels the backyard farmer might one day have an important role to play, especially in growing fruits and vegetables that have fallen foul of modern processing and packaging technologies.

'I realise life has changed. People are busier and growing your own food is time-consuming. But it is also very enriching and I think there are a lot of people who would like to do more with their gardens.'