

# Production Case Studies: International

**In recent years, several examples of highly profitable organic market gardens have emerged, which demonstrate systems selling vegetables and fruit direct to local communities**

## **Green City Acres, British Columbia, Canada**

Curtis Stone has been growing commercially on small plots of urban land since 2010, many of which are simply the underutilised gardens of sub-urban properties. During that time he has developed a highly intensive system that enables him to generate an annual gross income of \$75,000 from 1,400 square metres (0.14ha or 0.34 acres) for a labour input of 40hours per week.

He attributes his success to the following features:

- Limiting cultivated area to avoid over extension and excessive work hours in relation to returns.
- Focus on just 15 different high value crops, judged to be the most profitable.
- Selling via a mixture of restaurants, wholesale delivery services and a weekly farmers' market, so that if a crop doesn't sell via one market stream it can be sold elsewhere
- Growing close to the market, so that produce can be delivered by bicycle and close connections are made between customers, neighbours and growers.

The actual growing system used to generate these profits relies on intensive cultivation of fixed beds 0.76m wide, on which will be grown at least two different crops per year. Careful attention to details such as the number of days to maturity for each crop, yield per square metre of bed and length of harvest period (which reduces labour input for cropping time) and interplanting one crop with the following one, mean that the productivity and profitability of every square metre is maximised. Such details are set within the wider business context of ensuring a continuous supply of different crops through the seasons and responding to fluctuating popularity of crops to ensure that there is always a good market. Profitability is achieved through minute management of labour deployment through the season, with attention to be focussed on preventative weed control, automatic drip irrigation systems, efficient harvest and post harvest operations. Extra labour is often provided by people from the neighbourhood doing 2-3 hours work per week in return for some vegetables. This arrangement is popular for people who value the exercise and social aspect of garden work, as a contrast to office based work.

*Stone, C. (2016). The Urban Farmer. New Society Publishers*

## **Ferme du Bec Hellouin, Normandy, France**

Since 2006, the 6ha family run micro-farm at Bec Helloine has been perfecting the art of high intensity, non-mechanised market gardening. Their methods are drawn from traditions ranging from the Parisian market gardens of the nineteenth century, to permaculture, agroforestry and biointensive cultivation, with annual vegetable crops being grown in close proximity to fruit trees and perennial herbs and flowers. The annual crops are grown on permanent raised beds, at a high density, using a non-inversion tillage system. For example, one 80cm wide bed sown with 12 rows of carrot (6.5cm) apart, and over sown with 12 rows of radish (which will provide valuable shade for the carrot seedlings, and be harvested at 5-6 weeks), with lettuces followed by quick growing cabbage planted up the centre can yield 200 euros per square metre per year. The farm provides 60-80 weekly vegetable boxes to local people, as well as supplying gourmet restaurants in Paris.

In 2010 the productivity and unconventional techniques of this small farm attracted the attention of a researcher from AgroParisTech, leading to a study focusing on the questions:

- What is the economic performance that can be obtained in a limited area, arbitrarily set at 1000 square metres?
- What is the workload required to achieve this performance on 1000 square metres and how can it be distributed?
- What is the environmental performance of this system?

All crops grown within the 1000 square metre study area were weighed and recorded, and hours labour input were logged. During the first two years of the study (2013 and 2014), a monthly net income of 900-1500 euros (Annual net income 11-19,000 euros) was achieved from growing and selling 76 varieties of fruits and vegetables requiring an average of 43 hours per week. By 2015, the value of produce grown on the plot had increased to 54,800 euros, requiring an average of 30 hours per week in the garden and an additional 15 hours per week on related market farming tasks. Produce is sold via a The 76 crops thus grown do not include low value, bulkier root crops, such as potatoes, which are bought in from a neighbouring, mechanised farm to meet customers' expectations for these vegetables to be included in their weekly veg basket.

The total cost of setting up such a system is estimated to be 75,000 euros (0.5ha land 5,000 euros; hedges, fences and ponds 10,000 euros; fruit trees and bushes 5,000 euros; small storage building 15,000 euros; tools, irrigation equipment and glasshouses 25,000 euros; used vehicle 5000 euros; miscellaneous 10,000 euros.

*Hervé-Gruyer, P. and C. (2016). Miraculous Abundance: One quarter acre, two French farmers and enough food to feed the world. Chelsea Green.*

*K. Morell, C. Guégan<sup>2</sup> and F. Léger (2015) Can an organic market garden without motorization be viable through holistic thinking? The case of a permaculture farm. Acta Horticulturae. [https://www.fermedubec.com/wp-content/uploads/2017/11/ENGLISH-viability\\_organic\\_market\\_garden\\_without\\_motorization\\_paper.pdf](https://www.fermedubec.com/wp-content/uploads/2017/11/ENGLISH-viability_organic_market_garden_without_motorization_paper.pdf)*

## **Les Jardins de La Grelinette, Quebec, Canada**

For ten years, Jean Martin and Maude Hélène Fourtier have been earning their income exclusively from 0.6ha (1.5 acres), generating \$60,000-\$80,000 per acre in diverse organic vegetable crops with a 40% profit margin. Work on the garden begins in March each year, and ends in December, providing the couple with three months for rest, travel and other activities, alongside job security and profound satisfaction and enjoyment.

Their produce is sold via a Community Supported Agriculture (CSA – see separate Case Study Sheet) scheme supplying 120 shares over 21 weeks, as well as two farmers' markets (which equate to a further 100 shares per week) – each share having a value of \$26 worth of vegetables.

The garden consists of 180 x 30 metre long permanent beds, which are cultivated with a combination of a two wheel tractor with a PTO (Power Take Off) which can drive a flail mower or power harrow; heavy tarpaulins used to smother crop residues or weeds; a broad fork (wide manual tool with long tines used to aerate the soil) and a rake. The capital cost of setting up such a system is lower than for a system relying on a four wheel tractor and implements, with estimated set up costs for all tools, crop covers, and infrastructure coming to \$39,000. The larger scale of operation than Green City Acres, means that a wider variety of crops are grown, with protected crops such as tomatoes, cucumbers and salad leaves contributing about 50% of annual gross income.

*Fourtier, J.M. (2014) The Market Gardener: A Successful growers' handbook for small-scale organic gardening. New Society Publishers*

