

## The Horticulture Hobby Farm - Selecting and Developing

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Contrary to popular belief, it is unlikely that a 2 ha block of land can become economically viable. However, it can sometimes generate a supplementary income for those part-time horticulturists prepared to 'give it a go'.

The amount of cash return made from the block is generally in direct proportion to the following factors:

- Sufficient capital to put in the basic infrastructure (land clearing, fencing, soil preparation, sinking bores, irrigation reticulation and power connection, construction of a packing shed and a cool room, and the purchase or hire of machinery).
- Sufficient capital to grow the crop (fertiliser, seed, plants, irrigation equipment, insecticides, fungicides, fuel, bins/crate for harvesting and cartons for packing produce).
- Experience with the crop and a good knowledge of farming practices and management principles.
- Research of the market to determine the demand for the produce at the estimated time of harvest.
- Suitable soil for horticulture (deep, well drained).
- Sufficient good quality irrigation water to grow the crop through to harvest.
- Willingness to work for long hours at times.

Provided **all** the above criteria are met there is a chance of financial reward.

### LAND ISSUES

For information about land and leasing, please contact Land Administration, Department of Planning and Infrastructure (DPI), on 08 8999 5511 or visit their site at [www.dpi.nt.gov.au](http://www.dpi.nt.gov.au)

For proposed developments in all areas, and land clearing within Litchfield Shire, please contact Development Assessment Services, DPI, on 08 8999 5511 or visit their site at [www.dpi.nt.gov.au](http://www.dpi.nt.gov.au)

For land use regulations and land subdivision, please contact Development Assessment Services, DPI, on 08 8999 5511 or visit their site at [www.dpi.nt.gov.au](http://www.dpi.nt.gov.au)

For land clearing outside Litchfield Shire, please contact the Land Clearing Branch, Department of Natural Resources, Environment and The Arts (NRETA), on 08 8999 5511 or visit their site at [www.nreta.nt.gov.au](http://www.nreta.nt.gov.au)

### SELECTING A HORTICULTURE BLOCK

Not all land is suitable for horticulture.

Mapping of the soil types for the rural area surrounding Darwin, including Batchelor, has been done by the former Land Conservation Unit of the Conservation Commission. Advice on land resources (soil types and uses) is available from NRETA, which is situated in the Goyder Building in Palmerston.

Good horticultural land should have the following attributes:

- Flat or only gently sloping. Steep slopes are prone to soil erosion and are difficult to manage.
- Deep, well drained soil. This is particularly important where tree crops are to be grown. Trees need deep soils for good root development; poorly drained soils inhibit healthy root development. The natural vegetation of uncleared land is a useful guide to soil suitability. Stands of large stringy barks (*Eucalyptus tetradonta*) and Darwin woollybutts (*E. miniata*) indicate good horticultural soils. The red and brown earths are the preferred soils in the Top End although other soils can also be suitable. Small trees or sparsely wooded areas generally, indicate shallow soils. Dense stands of *Grevillea pteridifolia* (orange flowers), paperbarks (*Melaleuca* spp) pandanus, and *Lophostemum lactifluum* are found on poorly drained soils subjected to water-logging and flooding during the wet season. These areas are definitely not suitable for most tree crops.
- Good all year access. Good roads are important for transporting horticultural produce, which is often quite delicate and can easily become damaged travelling over rough roads, even for short distances.
- Adequate, reliable and good quality water. As all horticultural crops require irrigation in the dry season, plantings are limited to the amount of water available. To irrigate 2 ha in the dry season would require a bore with the capacity to deliver around 3-4 L of water per second. Advice on potential underground water for various areas can be obtained from the Resource Management Branch of NRETA. The availability of water should be checked out thoroughly when looking for a suitable block.

## SPECIAL CASES FOR OTHER LAND TYPES

The exception to this recommendation is the land type used for the Kensington Pride (KP) mango variety and other similar mango cultivars.

Two of the major problems faced by mango producers in the Top End are excessive tree growth and erratic flowering. Current industry practices would indicate that the stresses induced by seasonal water-logging in the wet season help to reduce tree vigour and therefore size. This promotes more consistent flowering behaviour in KP. Shallow, poor upland soils also have a similar stress effect on the growth and flowering of KP.

If water-logged soils are to be used for KP, the trees should be planted on mounds, which will allow them to establish successfully. Using this approach creates issues of access to the orchard in the wet season, which complicates other management operations. Each site should be assessed individually, both in the wet season as well as in the dry season, so that the period of water-logging and depth of standing water can be established.

Only experienced growers should consider this type of land for developing a mango orchard. Avoid riparian areas.

## DEVELOPING A BLOCK

### Termite treatment

*Mastotermes darwiniensis* or "giant termite" is one of the most important pests of tree crops in the NT; it will also attack vegetable crops. Unlike most termite species which feed on dead plant material, the giant termite will attack living tissue, often leading to the death of even large trees, usually through ringbarking. A control program before clearing may reduce problems with giant termites in future; however, this has not been established. Although large numbers of termites can be killed prior to clearing, landowners must note that this initial treatment may not necessarily lead to a reduction in termite problems in the longer term, due to re-colonisation and regeneration of partially-destroyed colonies. For more information on termite management contact DPIFM Entomology or refer to <http://pestinfo.nt.gov.au/>

## **Clearing the block**

Clearing should be done when the soil is still moist, either after a few good showers at the beginning of the wet season, or before the soil dries out at the end of the wet season. Trees are easily pushed when soil conditions are right, taking most of their roots with them. If the ground is too dry they often snap off at the base leaving stumps which are difficult to remove later.

Ripping and stick raking help reduce sucker regrowth and clean up the block for cultivation. The final operation is to level off the block, filling in all holes and depressions. This facilitates machinery operations later, such as spraying, operating cherry pickers and preparing seed beds.

Clearing can take 2 to 6 hours per hectare depending on the vegetation and the machinery used. Obtain at least two quotes giving an hourly rate and approximate time needed, before commencing clearing. Most contractors will charge travelling time for small jobs.

## **Fencing**

Animals can do considerable damage to crops in a very short time. Even wallabies can wreak havoc, especially during the early stages when plants are small. To prevent the frustration of finding all your hard work destroyed overnight or while you were away, it is essential to have good fences. The standard four to five strand barbed wire fence will only keep larger animals out. Smaller animals such as pigs and wallabies require a seven strand electric fence or an 8-80 hinged-jointed fence, with one strand of barbed wire at the bottom and two at the top. Information on how to erect fences can be found at most farm supply outlets.

You will need to obtain prices for:

- Four corner assemblies.
- At least one gate.
- Star pickets @ 8-10 m spacing.
- Hinged joint wire.
- Rolls of plain medium high tensile wire and barbed wire.
- Pliers, tie wire and clips.

A set of wire strainers is a good investment for any block.

## **Irrigation**

Available water is the most important criterion in the development of a horticultural block. There is no point in planting anything unless you have enough water to grow it through to harvest or, in case of tree crops, to irrigate when they reach maturity at about year 10. Before any development takes place, the amount of water available should be determined by putting down a bore.

Generally most underground water in the Top End is suitable for irrigation, but some areas near the coast could have salinity problems. Other problems with water quality include very high levels of iron or calcium. All bores must have an analysis carried out for water quality. This information is available from the Resource Management Branch of NRETA. Most horticultural crops are grown during the dry season and require large amounts of water during the final stages of growth to develop a marketable product. A vegetable crop in dry windy weather requires 50 000 to 70 000 L of water per hectare every day, using trickle tape and plastic mulch. Overhead sprinklers or flood irrigation methods would require much more water. A hectare of fruit trees, using under tree sprinklers, would require 35 000 to 60 000 L, on average, every day. Any serious part-time grower would need a bore with a flow rate of at least 3 to 4 L per second, which will require a submersible pump of at least a 3.7kw rating.

Once the amount of available water is known, the actual planning of what to grow, how much, and the layout of the system can begin. The inexperienced layman would be well advised to seek professional advice on

the finer details, such as flow rates, when deciding on pipe sizes. Mistakes in the initial design of a system can be very costly later should you wish to expand. Irrigation specialists can also save you money by suggesting cheaper alternatives.

The cost for setting up irrigation includes:

- Drilling and casing a bore.
- Providing a pump, electrical switching and control system.
- Connecting to mains and sub-mains.
- Providing laterals and sprinklers or drip tape.
- Trenching.

### **Power**

The intending grower will find that three-phase power will be necessary to operate a 3.7 kW submersible pump. It can also be useful for running cool rooms and larger capacity equipment in the workshop. Most rural blocks have mains electricity available, which is a very convenient source of power which should be utilised. Diesel generators may appear cheaper at first, but when the cost of running them for 24 hours a day (if cool rooms are being used), the time and money spent on repairs, maintenance and replacement are all added up, they begin to lose some of their appeal.

There are a number of other promising alternatives which are worth looking into, such as power storage in batteries. The batteries are charged by a generator or solar panels and are used when required. These systems are usually expensive to set up but are relatively cheap to run.

Once the power is on, the cost of over-head or underground reticulation is virtually the same. Underground reticulation does, however, have the advantage of being out of the way and has less chance of being struck by lightning.

Obtain prices for electricity connection and current kilowatt rates from Power Water.

### **Buildings**

Some form of shelter will be necessary for storing items such as fertilisers, chemicals and tools. To begin with, this need not be particularly large, but when planning, always allow for later expansion. Once production begins, additional space will be needed for storing packing materials and produce, and for sorting and packing. If the business expands, a cool room may be necessary.

Buildings erected in the Darwin area must be built to code and plans must be submitted to the Building Board for approval before any building commences. These rules apply to most of the rural area surrounding Darwin. Therefore, check with the Building Board before undertaking any building projects. If a septic tank system is to be installed, approval must be obtained from the Department of Health. All septic tanks must be at least 100 metres from any bore, including your neighbour's. It is important to take these factors into consideration when siting buildings. On a 2 hectare block this can be fairly restrictive.

### **Machinery**

It is difficult to justify buying a whole range of machinery to work a small block of land. Most jobs only require a tractor for a short time and it makes better economic sense to hire the machinery or get a contractor in to do the job.

For wealthy part-time growers who feel they need to have their own machinery, below is a list of some equipment that would be useful to start with:

- Welder.
- Trailer or Ute.
- Spray rig (self-contained or tractor-mounted PTO driven).
- Tractor.
- Slasher.
- Ripper and pipe layer attachment.
- Cultivator.
- Fertiliser spreader.

Additional options for vegetable growers could include:

- Toolbar + tines for inter row cultivation + discs for bed building/forming.
- Plastic mulch layer.

Other useful extras could include:

- Posthole borer.
- Wire spinner.
- Grader blade.
- An air blast spray unit (useful for spraying larger fruit trees in mature orchards).

Much of this equipment can be bought at auctions or through the classified ads in local papers. Growers with welding skills can make up some of the equipment themselves. Growers just starting out, however, will find that it will be cheaper to get contractors to do most of their tractor work, such as soil preparation, spraying and slashing.

The costs of equipment and infrastructure given in this Agnote are only a rough guide. The actual costs will depend on the individual, what he/she can do himself/herself and if he/she is able to pick up any cheap bargains at auctions. The one thing that he/she will not be able to pick up cheaply anywhere is experience in growing and handling crops. This can only be gained over a period of time. It is generally accepted by those who know that to learn how to grow a new crop successfully takes three to five years. Inexperienced intending part-time horticulturists should limit financial expectations from their newly-acquired acreage to the amount of capital, time and expertise they can put into the venture.

Please visit us at our website:

**[www.nt.gov.au/dpifm](http://www.nt.gov.au/dpifm)**

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