3. *Arborloo* - The Single Pit Compost Toilet

The single pit compost toilet, or *Arborloo* (Figure 3-1 and Figure 3-2), is simple toilet is made up of 4 parts:

- The pit
- The ring beam to protect the pit
- The concrete slab which sits on the ring beam
- The toilet house which provides privacy.

The pit fills up with a mix of excreta, soil, wood ash and leaves. Leaves are put in the base of the pit before use and every day some soil and wood ash are added to the pit. Dry leaves are also added to the pit from time to time, if available. No garbage is put down the pit. Garbage such as plastic, rags, bottles, and tin cans are placed in a separate garbage pit dug for this purpose.

When soil, ash and leaves are regularly added to excreta, the conversion into compost takes place at a faster rate compared to excreta to which nothing has been added. The daily addition of soil and ash also helps to reduce flies and smells. If ash or leaves are not available add soil alone – it helps!

When the *Arborloo* pit is full, the parts of the toilet are moved to another place, rebuilt and used in the same way again. A thick layer of soil is placed over the filled pit. A young tree is planted in this soil and is watered and cared for. It is often best to allow the pit contents to compost for a while, top up with soil again and then plant the young tree at the start of the rainy season.

After some years a large mature tree will be growing where the toilet was before (Figure 3-3 and Figure 3-4). A new orchard of fruit trees or a woodlot of gum trees will be growing, using nutrients derived from the compost formed from excreta. In fact most trees will grow on an *Arborloo*

pit if well cared for, including ornamental, shade and indigenous trees. Urine diluted with water (1:5) can help many trees grow faster, including banana, mango and mulberry trees. By using this simple principle, the nutrients in our excreta can be recycled into something valuable – without any handling of the compost. Trees are good to look at, and they can provide food, shade, fuel and building materials and also consolidate the soil. They improve the environment and our world enormously.

Figure 3-1: Simple compost toilet built on rectangular slab

Figure 3-2: Toilet house built over a round slab in Malawi

3.1 How to build the single pit compost toilet

The first step is to make a small concrete slab. The round slab has a 1m diameter for a 0.8m diameter pit. The concrete slab is made with a mixture of Portland cement (PC 15 for concrete work – masonry cement should NOT be used) and good quality river sand (sharp feel and clean) with some wire reinforcing. The mould for the concrete slab is made from a ring of bricks (Figure 3-5) or tin loop laid out on level ground. The bricks are laid around a circle marked on the ground, one metre in diameter. A plastic sheet is placed over the brick mould and the squat hole is made by placing a shaped plastic bucket or shaped bricks in the slab mould (Figure 3-6).

Figure 3-3: A healthy paw paw tree growing on a filled pit

Figure 3-4: Fruit trees can grow very well on these organic pits

Figure 3-5: Ring of bricks for the mould

Figure 3-6: Sheet of plastic laid in the mould

A concrete mixture is required to make the slab. The concrete mix for a one metre diameter slab is 8 litres of cement (PC 15) and 30 litres river sand (Figure 3-7). A 50kg bag of cement contains about 40 litres cement, enough for 5 slabs. If there is doubt about the quality of the cement use 10 litres of cement and 30 litres of clean river sand. The sand and cement must be very well mixed on the ground or in a wheel barrow. After mixing the dry sand

and cement add about 2 - 3 litres of water to make a stiff mix like porridge. Mix thoroughly again.

Add half the mix to the slab mould and spread out evenly. Add 4 reinforcing wires each 3mm to 4mm in diameter and 90cm long in a square shape around the squat hole (Figure 3-8). Strong barbed wire will do. Then add the rest of the concrete mixture. Spread out evenly. Also ram down hard with a wooden float. Smooth off with a steel trowel. Add two thick wire handles on either side for lifting if required. After 3 hours take out the bricks or bucket from the squat hole and make the edges neat with a trowel (Figure 3-9). Cover the slab with a plastic sheet overnight. The following morning - wet down the slab and cover again. The slab must be covered and kept wet for at least 7 days and preferably 10 -14 days to cure properly before moving.

3.2 How to make ring beams

The ring beam is a ring of bricks or concrete which is placed at the top of the pit. The concrete slab is laid on the ring beam. The ring beam helps to keep the top of the pit from falling in. It also supports the concrete slab, which is raised above the ground level. The ring beam also diverts rainwater away from toilet site. The pit is dug down inside the ring beam once it has been laid. The soil taken from the pit is rammed in place around the ring beam to make the toilet safer and raise the ground level around the toilet. The ring beam can be made of bricks and anthill mortar or it can be made from wire reinforced concrete using a mix of cement and clean river sand. It is important to raise the toilet base above ground level to avoid flooding during the rainy season. The ring beam is made on slightly raised ground where the toilet is to be built.

To make the smaller brick ring beam with an internal diameter of 80cm, get some fired farm bricks and mark a circle on the ground 80cm in diameter. Lay the bricks around the circle (Figure 3-10). Make up some anthill mortar (*Ivhu re pa churi*) by breaking up anthill soil and mixing with water. Using a trowel add the anthill mortar between and above the bricks. Then add a second layer of bricks on the first layer (Figure 3-11). The upper layer of bricks should sit on the joint between bricks of the first course. Use the anthill mortar to hold all the bricks together (Figure 3-12).

Figure 3-7: Measuring cement and river sand

Figure 3-8: Cement and reinforcing wires in mould

Figure 3-9: Mould after removal of squat hole insert

Figure 3-10: Forming the brick ring beam

Figure 3-11: Adding the second layer of bricks with anthill mortar

Figure 3-12: Completed brick ring beam

If bricks are not available, or if extra cement is available, use clean river sand and fresh cement to make a concrete ring beam which will last for

many years. The same mixture for making the concrete slab is used to make the concrete ring beam: 8 litres of cement and 30 litres of river sand. But the cement must be fresh and the river sand very clean. The measurements and the mixes must be exact and 7 - 10 days curing for the cement is required. If the cement is not fresh or the river sand is not clean it is best to make a stronger mix of 10 litres of cement and 30 litres of river sand.

Level off some ground and lay a plastic sheet over the ground. Take some bricks and make two circles of bricks. The concrete ring beam will be made in between the two circles of bricks. Lay the bricks so the outer and inner circles will make a ring beam in between them which is 85cm inside and 115cm outside. Thus the width of the ring beam is 15cm all round. Fill the spaces opened up between inner bricks with wet sand (Figure 3-13 and Figure 3-14).

Figure 3-13: Brick mould on top of plastic sheet

Once the brick mould has been made, make up the concrete mixture of 8 litres fresh cement with 30 litres good river sand. Mix the dry parts thoroughly first then mix with about 3 litres of fresh water. Mix thoroughly again. Add half of this mixture to the mould and level off. Then take a length of 3mm wire and place above the concrete mix all around the beam about half way between the inner and outer bricks (Figure 3-15). A second ring of wire adds extra strength. Then add the remainder of the concrete mix to the mould and level off with a wooden float (Figure 3-16).

Figure 3-14: Filling the spaces in the inner brick mould

Figure 3-15: Cement and wire reinforcement added to mould

Figure 3-16: Levelling off the concrete

Figure 3-17: Completed ring beam

Figure 3-18: Digging of hole inside ring beam

Figure 3-19: Dry leaves added to the pit

Cover with a plastic sheet and leave overnight. The following morning, wet the ring beam and keep wet and covered for 7 - 10 days to cure. Every day the concrete gets stronger. After 7 -10 days the ring beam can be lifted and

put into place at the toilet site on levelled ground (Figure 3-17). Dig down a hole within the ring beam to at least 1.0m and up to 1.5m below surface depending on soil type (Figure 3-18). Place soil around ring beam and ram in place hard.

A big sack of dry leaves is added to the pit (Figure 3-19). These help the contents of the pit to compost. After adding the leaves the slab is moved on to the ring beam (Figure 3-20). It is best to lay the slab in some mortar placed on the ring beam. This can be made of anthill mortar or weak cement and sand (20:1). This packing allows the slab to rest evenly on the ring beam and also forms a seal. Figure 3-21 shows a group of trainees at Kufunda village (Ruwa, Zimbabwe) being taught how to build a simple compost toilet.

Figure 3-20: Toilet slab placed on ring beam

Figure 3-21: Trainees at Kufunda village

The ring beam method is suitable for most soils which are moderately firm. It also works in sandy soils which have some firmness. But the method is not suitable for very loose sandy soils which collapse easily. In this case some sort of pit lining will be necessary. If bricks or blocks are used to line the pit, it is best to use the toilet system to make compost which can later be dug out rather than plant a tree directly in the pit. The excavated pit can be used again. To use bricks or blocks to line a temporary pit is uneconomical. The excavated compost can also be used for tree growing as well as vegetable growing. When used for growing new trees, a tree pit 60cm X 60cm and 60cm deep can be dug and the toilet compost added to this. The tree is best planted in a layer of soil placed above the pit compost. The pit composting process takes up to a year in a shallow pit if plenty of soil, ash and leaves have been added. It may take several years if no extra

ingredients are added. Pit compost can be transferred to a tree pit relatively safely after 6 months of composting, since it is covered with topsoil. Young trees are best planted during the rainy season.

By making the slab slightly larger (1.15m) it can be fitted over a concrete ring beam with an internal diameter of 1m. This relatively small increase in pit diameter from 0.8m to 1m increases the pit volume by 1.5 times, and thus extends the pit life by about that amount. Even larger slabs and ring beams can be used. These use more cement and are heavier to lift, but extra pit volume is gained.

A 1.15m diameter concrete slab can be made with 10 litres of fresh cement mixed with 50 litres clean river sand with at least four 3mm wires used as reinforcing. This slab is fitted over a concrete ring beam with an internal diameter of 1m and an external diameter of 1.4m (ring beam width 20cm). This ring beam also uses 10 litres of cement and 50 litres of sand. So the slab and the concrete ring beam each use 10 litres of cement (total 20 litres) which is half a 50kg bag of cement. The pit is dug down inside the ring beam down to a depth of between 1 and 2 metres. Soil from the pit is heaped around the ring beam and rammed in place. A suitable house is built around and over the slab for privacy. Ideally it should be fitted with a roof. Flies and odours can be reduced by regularly adding soil, ash and leaves to the pit to cover fresh excreta added. But in the hot wet summer months it may be impossible to control them completely.

This slab and ring beam combination can also be used to build a normal shallow pit toilet with a maximum depth of around 2 metres if the soil is firm enough. Where ring beams are used the house must be made of light materials like poles and grass. The brick built superstructure is too heavy for the ring beam method. Even with the normal pit toilet, steps must be taken to reduce flies and odours and the addition of soil, ash and leaves is recommended. It also helps to keep the inside of the toilet very clean, and a cover can be placed over the hole when the latrine is not in use. Eventually excreta added to a pit will compost even if little soil is added, but this may take 5 – 10 years depending on the conditions. Composting takes place faster in unlined pits with an earth wall and greater drainage area compared to pits lined with bricks. Rubbish like plastic and rags should not be added to the pit but placed in a separate garbage pit.

Figure 3-22: Circle of bricks 1.15m in diameter

Figure 3-23: Shaped bucket to make the squat hole

Figure 3-24: Mixing the cement and river sand

Figure 3-25: Adding the cement and sand mix to the mould

Figure 3-26: Wires added for reinforcement

Figure 3-27: Remainder of concrete mix added and levelled-off

To make the 1.15m concrete slab, lay a plastic sheet on level ground and lay bricks in circle 1.15m in diameter to make a mould (Figure 3-22). Add

a shaped bucket or bricks to make the squat hole (Figure 3-23). Make a mix of 10 litres Portland cement and 50 litres clean river sand (Figure 3-24). Add about half of the mix to the brick mould and level off (Figure 3-25).

Steel wires 3mm in diameter are used for reinforcing. For the larger slab at least four pieces are laid in a square around the squat hole (Figure 3-26). Eight pieces would be better. After laying down the wires, add the rest of the concrete mix and level off (Figure 3-27). The slab is left to cure for at least 7 days and preferably 14 days, being kept wet at all times after hardening. Once cured, the slab can be moved to the toilet site. The ring beam is laid down first on levelled ground, the pit dug and the slab added.

To make a concrete ring beam with a 1m internal diameter, lay plastic sheet on ground and make two circles of bricks (Figure 3-28). The concrete for the ring beam is laid between the two circles. The inner diameter should be 1.0 metre and the outer 1.4 metres. This makes the width of the ring beam 20cm. Pre-cut sticks can be used to make the measurement. Make up a mix of 10 litres cement and 50 litres clean river sand and mix into concrete (Figure 3-29). Add half the mix to the brick mould and level off (Figure 3-30).

Figure 3-28: Two brick circles for ring beam mould

Add two complete circles of 3mm wire on the concrete (Figure 3-31). Then add the remainder of the concrete mix and level off with wooden float

(Figure 3-32). Cure in the same way as concrete slab. When slab and ring beam have cured, move both on to toilet site. Place the ring beam on levelled ground and dig pit. Heap and ram soil around ring beam. Place slab on ring beam on bed of weak mortar.

Figure 3-29: Mixing the cement and river sand

Figure 3-30: Concrete mix added to mould

Figure 3-31: Wire reinforcement added

Figure 3-32: Remainder of concrete mix added and levelled-off

For the brick ring beam, the pit is dug down inside the ring beam (Figure 3-33), and the extracted soil being placed around the ring beam and rammed hard in place (Figure 3-34). The pit is dug down at least one metre and up to 1.5 metres deep. The deeper the pit the longer it will last.

For the concrete ring beam, it is important to make the ring beam first and place it in position at the toilet site before digging the pit (Figure 3-35). The pit is dug inside the ring beam. Soil taken from the pit is placed around the ring beam and rammed hard in place (Figure 3-36). This raises the soil

level around the toilet site and helps protect the pit from erosion caused by rainfall.

Figure 3-33: Digging the pit inside the brick ring beam

Figure 3-34: Packing soil around the brick ring beam

Figure 3-35: Placement of the concrete ring beam

Figure 3-36: Digging the pit inside the concrete ring beam

3.3 Building the toilet house (superstructure)

The toilet house is built around the ring beam and slab with local materials like poles and grass (Figure 3-37). Where a ring beam is used the structure should be light. Use of poles and grass is a traditional method, sometimes without a roof (Figure 3-38). A roofed structure is better (Figure 3-39), and it is good to have a neat interior with soil and ash ready (Figure 3-40).

Superstructures are used to add privacy to the toilet. There are many ways of making the superstructure from simple low cost materials. It is best to make a roof to fit over the structure for shade and to keep the rain out. This also helps control flies. *Arborloo* structures should be made in such a way

that they can be moved easily or dismantled easily for movement from one location to the next. The structures are generally light and made of traditional materials.

Figure 3-37: Using poles to build the toilet house

Figure 3-38: Toilet houses without a roof

Figure 3-39: Toilet house built with local materials

Figure 3-40: Interior of a toilet house

3.4 Making an *Arborloo* fitted with a pedestal

This series shows a 1m diameter slab being made for use with a concrete ring beam and homemade pedestal. Several types of homemade pedestal can be used (see Chapter 5). To cast the slab, mark out a 1m diameter ring on flat ground. Surround with bricks and lay down plastic sheet inside. Insert mould for making the hole 30mm to rear of slab. Cut suitable lengths of 3mm wire. Make mix of cement (10 litres) and clean river sand (30 litres). Add half the mix first and then add the wires (Figure 3-41). Add rest of the mix and level off (Figure 3-42). Cover with plastic sheet and leave to cure for 7 days. Keep wet after the concrete has set.

Figure 3-41: Laying down reinforcement wires

Figure 3-42: Levelling-off the concrete mix

Figure 3-43: Ring beam mould using bricks

Figure 3-44: Addition of wire for reinforcement

Make the ring beam by laying bricks so the inner diameter is 85cm and the outer diameter 115cm (Figure 3-43). Fill openings between inner bricks with wet sand. The concrete mix is the same as for the slab. Add half the concrete mix and then add at least 2 rings of 3mm wire in a loop (Figure 3-44). Add the remainder of the concrete and level off. Allow to cure for several days.

Keep ring beam in original site or role to new site (Figure 3-45). Loosen earth and bed down ring beam in topsoil. Dig down within the ring beam one metre deep – max 1.5m (Figure 3-46). Add a sack full of leaves to the inside base of the pit (Figure 3-47). Make up mix of anthill mortar by adding water to broken anthill soil. Place mortar on top of ring beam and bed in the slab into the mortar (Figure 3-48).

Figure 3-45: Moving the dry ring beam to a new site

Figure 3-46: Pit dug inside ring beam

Figure 3-47: Addition of leaves to pit

Figure 3-48: Anthill mortar packed around ring beam

Figure 3-49: Slab placed over ring beam

Figure 3-50: Gum poles, reeds and grass used to build the wall

After placing slab in position over the ring beam (Figure 3-49) make the superstructure. This can be as simple as using treated gum poles for

uprights with reeds and grass used as walls (Figure 3-50). The reeds and grass can be made up as panels. Later refinements including a roof can be added (Figure 3-51).

Figure 3-51: Completed toilet house

Figure 3-52: Low-cost pedestal on top of slab

The low cost pedestal is added on top of the slab (Figure 3-52). This one uses only concrete and an insert of a 10 litre bucket (see Chapter 5). A hand washing device should also be made and hung inside the toilet (see Chapter 9). A sack or bucket of dry soil and wood ash should be provided inside. Soil and wood ash can be combined (3:1). Add a small cupful after each use. Adding dry leaves also helps the composting process in the pit. The added soil and ash also assists composting and reduces fly and odours.

When the pit is nearly full, move ring beam, slab and structure to another site and top up the pit with soil. Wait until the rains before planting a suitable tree. Protect tree from animals and keep watered. Most trees (fruit, indigenous, fuel and timber) will grow well.

3.5 Types of superstructure

Most simple structures are built with poles and grass (Figure 3-53). Even these simple building materials can be used to make a functional and attractive structure (Figure 3-54). A huge range of home built structures can be built with simple building materials (Figure 3-55), including those fitted with homemade ventilation pipes (Figure 3-56).

Portable structures can be built over a frame of poles (Figure 3-57) or steel (Figure 3-58). Grass, reeds or plastic bags and other materials can be used

for walling. The roof can be made of thin corrugated iron or even plastic sheet laid over chicken wire mounted on a frame and covered with grass.

Figure 3-53: A simple structure made of poles and grass

Figure 3-54: A functional and attractive structure

Figure 3-55: An example of one simple style of structure

Figure 3-56: Another style of structure with a ventilation pipe

Figure 3-57: A portable structure built using a frame of poles

Figure 3-58: A portable structure built using a frame of steel

3.6 How to use the single pit compost toilet

When using a compost toilet regularly add dry soil, wood ash and leaves to the pit as well as excreta. This mix of excreta, soil, ash and leaves helps to make good compost in the pit. Add soil and ash after every visit to deposit faeces, about a small cup full of soil and some ash, but not after every visit to add urine. Sometimes add extra leaves from time to time. If ash and leaves are not available the addition of soil alone helps.

It is important to keep the toilet clean. Never put any kind of rubbish or garbage down the pit like plastic and rags. Use the toilet until the pit is nearly full. Keep fly breeding under control by adding plenty of soil and ash if possible. When the pit is nearly full it is time to move the single pit compost toilet to a new location.

Remove the superstructure or take it apart. Remove the concrete slab and ring beam. If it is a brick ring beam, take the bricks apart and re-use them in the new site. Cover the contents of the pit with a thick layer (15cm deep) of good soil. Now rebuild the brick ring beam in a new site. If a concrete ring beam is used it just needs to be moved to the new site. Dig a new pit inside the ring beam and surround the ring beam with soil and ram hard. Add a sack of leaves to the bottom of the pit. Place the slab on the new ring beam and rebuild or refit the superstructure. Then start to use the new toilet.

3.7 Planting trees in a filled organic pit

There are three main ways to use a filled pit. The first is to cover the pit contents with plenty of good soil at least 15cm deep. Leave this pit to settle. Add more soil and wait for the rains before planting a new young tree. The second way is to cover the pit contents with plenty of good soil at least 15cm deep and plant a young tree immediately in the added soil and look after it. It will require protection from animals and frequent watering. The third method is to allow the pit contents to turn into compost and dig the compost out later, after 6 to 12 months, for use on the garden or for trees.

Mulberries are tasty fruit and are easy to grow. They can be grown from cuttings (Figure 3-59). Place a cutting in a pot or bucket and fill it with good fertile soil. Keep it watered and protected. It will then grow larger and

stronger in preparation for planting on top of the *Arborloo* pit in 6 – 12 months time (Figure 3-60). Once planted, adding wood ash provides potassium which helps fruiting. Adding compost and leaf mulch also helps.

Figure 3-59: Mulberry cutting planted in a pot

Figure 3-60: Young mulberry tree

Figure 3-61: Banana tree growing on an *Arborloo* pit

Figure 3-62: Planting a mulberry tree on an *Arborloo* pit

Most trees grow well on *Arborloo* pits. Good fruit trees for *Arborloo* pits are mulberry, avocado, guava, mango, paw paw and banana. Figure 3-61 shows the luxuriant growth of a banana on an *Arborloo* pit in Malawi. Figure 3-62 shows the first trainees at Kufunda Village Training Centre in Ruwa, Zimbabwe, planting a mulberry tree on an *Arborloo* pit. Many other types of tree including citrus, eucalyptus, indigenous and ornamental trees have been tried and are known to respond well. Plant the young tree in a thick layer (15cm) of topsoil placed above the compost. The young trees must be cared for. They must be protected from animals and must be watered often. If the tree dies, plant another. Trees are best planted just

before or during the rainy season. In time the tree will provide many fruits, or provide shade or fuel. All growing trees require additional feeding and benefit from the application of leaf compost as a mulch and also garden compost or manure, periodically dug into the topsoil surrounding the tree. Applications of liquid manure also produce a good response. A mug full of wood ash every week or two provides potash which helps fruiting. Nitrogen loving trees like banana also benefit from the addition of urine diluted with water (2 litres urine + 10 litres water), applied once a week.

The single pit compost toilet *Arborloo* will move about in the garden and will help to make many new trees of various types over the years such as fruit, fuel, building, and shade trees. The time to fill the *Arborloo* pit depends on the depth of the pit and the number of users. It will normally be between 6 and 12 months for small to medium sized families. Space the tree sites to suit the type of tree.

3.8 Growing vegetables on *Arborloo* pits

Practical experience has shown that vegetables are also grown on *Arborloo* pits. In Ethiopia many users of *Arborloo*'s have chosen to plant pumpkin rather than trees. According to a report by Mayling Simpson-Hebert (2006) the output of pumpkin has been doubled by planting the seeds in *Arborloo* pits (Figure 3-63). Pumpkin has also been planted on *Arborloo* pits in Mozambique. Sometimes a tree like banana is planted together with pumpkin on the same pit. These valuable techniques are also being used in Zimbabwe, where tomato plants are also grown (Figure 3-64). In fact when several *Arborloo* pits are fully composted or in a stage of composting they can be regarded as "organic oases" with increased fertility and looseness of soil. This is particularly valuable when the surrounding parent soil is poor and contains no humus. Organic fertilisers, compost and manure can also be dug into the organic pit to increase production if desired. Even conventional fertilisers can be added if they are available and affordable to increase the food output of the pit. As experience is gained, the value of these "agro-pits" may prove to be very useful in the production of a wide range of trees, vegetables and herbs (Figure 3-65 and Figure 3-66). Their safety lies in the fact that the composting material lies beneath a generous layer of topsoil in which the plants start to grow.

Figure 3-63: A pumpkin crop in Ethiopia

Figure 3-64: Tomato plants growing on an *Arborloo* pit in Zvimba, Zimbabwe

Figure 3-65: Passion fruit growing on an *Arborloo* pit in Malawi

Figure 3-66: Pumpkin growing on a *Fossa alterna* pit in Zimbabwe

3.9 Making compost in small single shallow pits

The single pit compost toilet can also be used to make compost for use on the vegetable garden rather than grow trees. The same structure consisting of a slab, ring beam and toilet house is used and the same method of adding soil and ash to the pit. But the compost must be left in the pit for at least 6 months and preferably 12 months before it is dug out. This means that extra ring beams must be made and pits dug inside them. For the smaller ring beams and slabs 3 ring beams will be required.

The slab and toilet house will move from the pit 1 to pit 2 and then to pit 3, as the pits fill up with the mix of excreta, soil, ash and leaves. When pit 3 is full, pit 1 is dug out, which should be after roughly 12 months or more of composting). This compost is fertile and can be mixed with garden soil and

other compost to grow vegetables. Mix one part compost with two parts topsoil or even mix the two in equal parts. Also add leaf compost or garden compost if available. The slab and the house can then be put back on pit 1 which has been emptied. So the toilet rotates between the three pits in the garden. The ring beams stay in place permanently. If the larger slab and ring beam is used, then only two ring beams are required for a family unit. This method of alternating between two pits is described in the next chapter.

In this way valuable compost can be harvested from each pit every year, and used to grow better vegetables. It is important that the pit be left for one full year if possible to compost before being dug out. So with our toilet we can also grow trees or we can make good compost for the garden.

The next section deals with making a double pit composting toilet in which only two pits are used. The structure alternates between the two pits at yearly intervals. In fact it is possible to mount both pits inside the same house if the house is large enough, a method which is popular in Malawi and Mozambique.