WATA General Meeting 13/10/2025

Meeting Minutes

1. Welcome and update From Mike McNamara

- Mike welcomed everyone to the meeting and especially Daniel and Frieda from the Soil Ecology Laboratory. Mike proceeded to update tenants on committee activities since the last meeting.
  Some tenants have been dumping green waste around the site, especially in amongst the communal tree area. This seems prevalent on M and L-row. If identified the perpetrators will receive a letter from the committee and may be reported to WTC as it is dumping rubbish. The committee is working hard to tidy the site up by organising areas where waste can be collected before disposal and this practice is unacceptable. The committee will come down hard on any identified perpetrators.
- The 2nd round of plot inspections is now due. 96 tenants failed the 1st round. Some failed to show a plot number, others had a lot of rubbish on the plot, and some were completely unworked. Those that fail the 2nd round will receive termination letters as there are 71 people on the waiting list and if a tenant is unwilling or unable to work their plot it should be offered to someone on the waiting list.
- The committee carried out plot viewings today and showed 3 people around the site looking at the vacant plots, many of which are in a poor state. All 3 took up a plot which shows how keen the people on the waiting list are to take on a plot no matter the state and start to grow produce. Apart from the current cohort of potential tenants contacted by WTC plot viewings will now cease until the Spring. A couple of tenants have volunteered to clear the vacant plots which will then be covered until the Spring to keep them in a manageable condition.
- The tree survey is on hold for a short time while WTC seek permission from Reading Borough Council (RBC) to tag the trees as RBC is the landowner. Permission has now been granted and the project will start in earnest shortly.
- A couple of working parties will be organised to do major projects across the site. The first will be to improve the main entrance and make it welcoming to tenants and visitors.
- Mike invited tenants to fill any potholes in the roads with stones from their plot.
- The communal bonfire will be going ahead shortly. Any old or rotten wood can be taken to a specific place on site where it will all be burnt in one go. This will be managed by the committee who have permission from WTC to carry out the bonfire prior to 4pm. 4pm is still the earliest fires can be lit on individual plots.
- The committee are going to be starting a scheme to rent out a rotavator to tenants. There will be a deposit required and a disclaimer will need to be signed but the rates will be reasonable. £5 for half a day. £10 for a full day and £20 for a week. More details to follow shortly.

- The committee is looking to buy more security cameras which will be mounted on poles. We are waiting on replies from several engineering regarding the cost of recreating the system at the front entrance.
- The committee is in the process of applying for lottery money to get the asbestos removed from the community shed. We did get quotes, but they ranged from £3,500 and £7,500 which is beyond our means. If the roof is strong enough solar panels will go on the roof and the shed can then be used by our community. For those who don't know the shed is on E/F row, turn right after the Memorial plot and it's on the right. The shed on E13 has also been found to contain asbestos in the roof following damage from a tree. Tenants have been advised to stay away from the area.

2. <u>A Life in the Soil by Daniel and Frieda from the Soil Ecology Laboratory/Soil Smiths</u>

While Daniel talked to the group Frieda projected images from samples of compost extract under a microscope looking for living organisms.

Daniel is the director of The Soil Ecology Laboratory (established in 2020), based in Hampshire. They work with farmers nationwide, providing the tools to improve the quality of their soil and enhance the productivity of their land, naturally. Soil Smiths is the retail side of their research where gardeners, allotment holders etc can buy the products (The Goop and Living Feed) used by farmers.

The work at the laboratory carries on from the research by Dr Elaine Ingham. In 1985 she was part of a team looking at the role of protozoa and nematodes in the soil.

Terrestrial plants came into being approximately 650 million years ago. Microbes on the other hand came into being 1½ billion years prior to this. When plants started to colonize the land, they encountered microbes and had to learn to live with them. The first trees were small compared to today at about 1½ metres whereas there is a fossil of a fungi found in Saudi Arabia that was 8 metres tall. The tables have turned in modern times, but plants still have a special relationship with microbes. Plants produce sugar via photo synthesization which feeds the microbes. The sugar is excreted through the root system and taken up by the microbes. In return the microbes provide nitrogen, phosphorus, potassium, zinc, iron etc and water. A microbe rich soil will benefit plants as they have a better water holding capacity which is useful during a drought. This has been demonstrated in the laboratory and in field tests. Adding 1½mls of Goop per square metre of soil for 3 months increased the amount of salicylic acid by 70%. Salicylic acid improves a plants defence and immunity; improves stress tolerance for drought, heat and cold; improves growth and yield and helps resist against environmental toxins and heavy metals.

Goop and Living Feed are available to buy but anyone can increase the amount of biology (or soil fauna) in their compost, by creating the conditions where biology can thrive. A greater load of biology in compost will improve productivity of soil, nutrient recycling, resilience in extreme conditions and increase the amount of plant growth hormones.

Daniel has a hypothesis that beneficial biology applied over the winter will reduce the pathogen load in the soil come the spring. It is a naturally occurring tool for cultivators to use without resorting to synthetic products.

The biology in a soil extract includes bacteria, fungal hyphae, protozoa and nematodes. Fungal hyphae can be a force for good or bad. The beneficial fungal hyphae take poisonous elements, heavy metals, excess salt out of the soil and store them within the organism.

Bacteria and fungi decompose organic matter and pick up nutrients from sand, silt, clay, pebbles in the soil. They increase the amount of nutrition in the soil available to plants. For bacteria the nutrients are passed to the plants by the rhizophagy cycle. Plants attract bacteria, they will ingest the bacteria into the root system and bombard them with oxygen radicals until they open, releasing the nutrients. Some are allowed to live in the plant untouched these are called endophytes. Others are allowed to leave the plant via a lateral root. The plant will create a root hair to eject the bacteria into an area lacking in biology. The bacteria will then start to form a new colony which the plant will use as a source of nutrients moving forward.

Protozoa and nematodes also provide plants with nutrients. Testate amoebae ingest bacteria. All living organisms have a carbon to nitrogen ratio. Bacteria vary between 3:1 and 8:1. Most living organism are around 30:1. What this means is that protozoa must ingest a lot of bacteria to get the carbon, but this will give them an excess of nitrogen. Nitrogen is expelled in the form of urine and bacteria are no different. Urine also contains other elements such as water, ammonium salts, proteins, hormones and metabolites. This all happens around the root system of plants. Plants have evolved to be able to absorb these nutrients.
Nematodes are small worms approximately 0.1-0.6mm in length. They will feed on bacteria and store the nutrients in their bodies. Nematodes are crucial to having healthy soil. Increasing the nitrogen load in compost increases the number of nematodes living in it. Nitrogen component in compost can be increased by adding coffee grounds and chicken manure.

Any disturbance to these microsystems will knock back the community and it will take 10 to 12 weeks to reform. A disturbance could be digging, use of chemicals like herbicides or pesticides. Roundup is not just a herbicide but also antimicrobial. Some farmers grow green manure or other cover crop but don't want to rotavate it into the soil, so they will destroy the cover crop by using a herbicide like roundup. This will also destroy the microbes in the soil which would turn that cover crop into usable nutrients for the main crop. This was noticed by some agronomists who suggested farmers terminate the cover crop in January which would give the soil fauna time to recover. This means losing 3 months of growth.
The team at the Soil Ecology Laboratory have found that using their product or compost extract a few days after a disturbance allows the systems to restart immediately. It can be used as a tool by farmers.

Soil science has been around for some time now and there are several products available to buy. It's not just farmers who are using these products but allotment holders and keen gardeners.

For those who are keen to grow their own compost the Soil Ecology Laboratory are holding a compost competition throughout the year. There is a fee to take part (as the laboratory has no sponsors) and you can register via the laboratory website, if you would like to take part. By entering you will know what is in your compost, the biological content and the carbon to nitrogen ratio. A carbon to nitrogen ratio at or below 18:1 is less mulch and more like nutrition. A ratio at or below 10:1 is more like fertilizer. You will also receive a weekly phone call where the scientists will share their knowledge with you plus 20% off all products bought via Soil Smiths.

3. Soil Sampling and Questions

Daniel then asked those who had brought soil samples to take them to Frieda for analysis. Mike went first and a picture of his compost is shown below. While this was happening, Daniel took questions from tenants.

1. Mike is on his 2nd year of using green manure. Last year he noticed there was a lot of the root system of the green manure left in the soil. He asked if he needed to wait 10-12 weeks for the soil fauna to recover following digging or rotavating it in or use some of the goop to bypass waiting.
   Daniel said if he dug it in and didn't use weedkiller, he wouldn't have to wait as the green manure would start to decompose immediately. Facultatively micro-organisms can operate in aerobic or anaerobic conditions are present in the soil. When the soil is turned, these micro-organisms are now exposed to a high oxygen environment recreating one of the first extinction events on the planet.

The first microorganisms were anaerobic as there was no oxygen in the atmosphere. Some micro-organisms evolved to produce oxygen changing the atmospheric conditions. 80% of organisms living on the planet were unable to adapt and became extinct.
So once the soil is turned these microbes are exposed to the oxygen and die, releasing the nutrients within them ready for seeds to grow.

2. If the compost in a compost bin is turned regularly what is the optimum length of time to ensure a good population of soil fauna in the compost.
   To maximize the biology takes 2-3 months. After that the larger components just become smaller and smaller, moving from organic matter to something resembling peat. There are 2 versions of peat, bog peat and forest peat. Compost is travelling in the direction of hemic peat.
3. Why do some compostable coffee pots never compost down.
   The most popular plastic alternative is called PLA (polylactic acid). This is what compostable bags are made of. It's meant to be compostable. Studies have shown that they are compostable if you compost them for 6 months at a temperature of 70 degrees centigrade.
4. One of the longer term projects the Soil Ecology Laboratory are involved in is to make compost only using straw. This followed a couple of farmers sending in compost made entirely from straw bales which had been forgotten in fields. DNA was extracted from the roots of naturally growing wheat in Israel. DNA and Functional analysis were performed on the resultant compost. The microbial profile of the compost was very similar to the microbial profile of the naturally growing wheat in Israel. Everything on the functional analysis was high; usage of carbon; usage of potassium; transportation of nitrogen and production of hormones for plants. The amount of nitrogen in the compost was double that occurring in the straw. No nitrogen was added to straw during the composting process but upon analysis there were 18 species of nitrogen fixers amongst the faunae. Some had never been seen before. The hypothesis is that the microbial community will adapt to the conditions it finds itself in.
5. Daniel recounted a tale of a hippie who ran a hosepipe through his compost bin which was at 70 degrees. This hosepipe ran to his shower providing him with hot water for washing. The microbes in the compost recognized the plastic as a new compound and some developed to breakdown the plastic. They adapted.
6. Fresh compost with lots of wood chip in it will have huge amounts of fungi growing on it. If you look at the compost under the microscope you won't see any fungal hyphae as they are all attached to the wood chip.
7. Compaction of soil occurs naturally so even if soil is not walked on it will compact at certain depths. There are 5 levels of compaction between the top of the soil and a depth of 65cm. If biology is added to the soil during a growing season there will only be one level of compaction occurring at 15 cm.
8. Good compost is created by combining the physical, chemical and biological elements. The biology in soil is slowly being recognised as just as if not more important than the physical and chemical elements. An increased use and understanding of the biology and how it interacts with the physical and chemistry of the soil will lead to healthier, more

resilient crops reducing the need for chemical interventions and the disturbance it causes.

9. Daniel is a big supporter of farming but there is one practice that takes place in this country that was sold to wheat farmers as a convenience which he feels should be stopped immediately. Farmers were advised to kill the crop a couple of days before harvesting so they don't need to dry it later. They do this using glyphosate (weed killer). The glyphosate goes into the seed, into bread and into humans. The glyphosate goes through the stomach and small intestine. When it reaches the large intestine, the microbes in the gut begin to breakdown the glyphosate. One of the first byproducts of this process is AMPA and this is more toxic than glyphosate and every time you eat bread products you are putting it in your body while this practice continues.
10. When making compost it's better to mix up all the materials rather than layering them. It's best to mix it well early on and then leave it.
    Wood chips make excellent compost if just piled up and left. The carbon to nitrogen ratio is 300:1 for wood chip. Over time this will reduce to 10:1 which is when you have compost.
11. Composting as an industry was created to reduce the amount of stuff going into landfill. Organic matter was considered easy to divert and use to make compost. Each truck entering a landfill site is weighed as it goes in and weighed as it leaves and the tonnage is paid for the difference, it's called the gate fee. £80 per ton is paid as tax if the waste goes to landfill. No tax is paid if it goes to a green waste landfill site but there is still a gate fee. It's cheaper for companies to take waste to green waste landfill and leave everything. The landfill site has made its money via the gate fee but what happens to the waste. It must be sterilised. Organic matter cannot be sterilized its pathogen level is reduced and this is a legal requirement for these landfill sites. The guidance section of the regulations says the waste must be cooked at 75 degrees or higher for weeks. The resultant compost is then bagged and is ready to sell.
    When peat is cut from the ground it releases carbon which is deemed bad for the environment. Initially there was a voluntary ban on peat in compost which will become law as there is an alternative produced from green landfill sites.
    However the compost produced from green landfill sites is often poor quality and contains contaminants such as plastic. Improvement will only come if there is a demand for it at a grass roots level who demand better quality compost from garden centres and other suppliers.
12. The products sold via Soil Smiths are stable and should be just as effective after 3-5 years as when new. The main ingredient of the Living Feed is soya amino acids, so it smells like soy sauce. The team are now working on aero peat which can be used as a potting compost.

This was a very informative evening and hopefully the team will return next year, and we can see how our compost has improved.