 **Landcare Broken Hill Inc**

***Greening the Hill Mk.2***

ABC Radio interview No.16 – 13 August 2019

**ARID ZONE ADAPTATION – WICK GARDENING**

**Intro**

In order for us all to sustainably manage the environment in Semi-Arid and Arid Zones in Australia, which includes our Broken Hill region, we have to learn to be clever, **to learn to adapt** to the challenges of increasingly harsh conditions. In Broken Hill, if we do adopt sensible practices as part of our adaption, we’ll have a far better chance of improving the City’s environment.

Landcare Broken Hill’s ***Greening the Hill Mk.2*** initiative includes many projects designed to help the Broken Hill community to adapt by embracing new approaches to looking after their own “patch”. We’ve mentioned mulching & composting in the past; we’ve talked about leaving trees and plants in place (removing a tree being the last option to consider); we’ve talked about better ways to manage water (such as using grey water and getting a rainwater tank); and we’ve talked about better ways to retain moisture in the ground, reduce airborn dust and cool the city down with a determined effort to get more plants and trees growing.

**Today I’m going to talk about a clever approach to gardening in our harsh climatic conditions which ensures good plant growth while at the same time utilising less water. This clever approach is known as ‘WICK GARDENING”.**

**Wick Gardening**

Many listeners may have seen wick gardening described on the ABC’s Gardening Australia back in 2014. It is a method of gardening highly recommended by the Royal Botanic Gardens in Sydney for hot, dry areas, such as Outback Australia.

Essentially, it is an approach to gardening whereby the watering is done from the bottom of a growing container – a sealed raised gardening bed - which I’ll call the growing tank, rather than from the standard watering from the top. The majority of water for the plants is contained at the lowest level of the container, effectively a well, over which the growing soil sits in which the plants grow. As the surface temperature increases, the plants draw the lower moisture sitting in the well up to the growing zone.

It is this drawing water from the well or reservoir at the bottom to plants at the top which is referred to as **wicking**. As the plants feel hot up-top and are in need of a drink, they draw the water up. The wick analogy is clear when you think of the way an old kerosene or oil lamp used to work: there would be a reservoir of kerosene or oil into which a wick dangled and as that portion of the wick exposed to the air at the top of the lamp burned, the heat of the burning soaked wick drew more kerosene or oil up to burn.

With the traditional method of growing, say vegetables, while you water from the top with a sprinkler or dripper, the upper most layer of the soil which gets wettest looses much water through evaporation and wind drift of the spray. The vegetables tend to have a shallower root zone which is more susceptible to heating from hot direct sunshine. The downside of this traditional method is you have to water far more frequently to keep your plants alive, thereby wasting scarce water.

So the usual elements of a wick garden are: (1) a large sealed growing container or tank which can hold the reservoir/well of water at the bottom (it should have an outlet tap for release in wet seasons); (2) a thick layer of impervious material such as pebbles or scoria at the bottom (which is to be filled with the water); (3) a means of getting the water to the lower layer, usually a perforated agricultural pipe which is laid in amongst the pebbles in the lower layer; (4) an inlet tube, connected to the agi-pipe, which extends to the surface (into which you pour the water); (5) a layer of something between, like an old blanket or sheet, between the pebble reservoir and the growing soil above; and (6) the growing soil above into which you put the plants, such as your veggies.

**A tried and tested variation in local conditions**

Out on our station, we have successfully modified the wick gardening approach for vegetables to suit our Broken Hill conditions. We believe you need to soak the soil every third day or so, rather than totally relying on the wick effect. We think the surface soil temperature can be so hot, that a little extra help is required, but we nevertheless retain the extra water. Further, we’ve adopted an approach by which natural fertiliser from soaked horse manure is drawn up as part of the process from the lower water well.

So using old cut-off water tanks, we: (1) line them with impervious plastic; (2) create a thick lower layer of rough unbroken-down organic material with prunings, sticks, weeds, leaves, etc; (3) create the next layer out of horse manure; and (4) then place in the upper growing layer the soil with the plants. With each soaking, the water sinks to the bottom well and is retained. Between soakings, when hot dry days follow, the water is then drawn back up to the plant root zone, bringing nutriments as it passes through the soaked manure.

**The take-home message**

Despite the harshness of our environment, and the obviously worsening conditions, there are ways and means by which we can adapt, adopting sensible and sustainable measures by which we can continue to grow plants, whilst using scarce water wisely. Together, we can green Broken Hill, starting, if people want to give it a go, their own backyard patch.

**Next public meeting to provide an update on *GREENING THE HILL MK.2* and consult.**

**Centre for Community, 200 Beryl Street, 7.00pm Thursday 29 August**

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