

## Photos – Results of PolBionix Pots Being Planted Directly Into Soil

On the 7<sup>th</sup> of **September 2021** two Italian parsley plants were transplanted into two PolBionix pots that were then planted directly into the soil.

*It should be noted that normally the plants would be grown in the PolBionix pots for a number of months before being planted with the plants in soil. During the nursery period the PolBionix pots will commence the biodegradation process as the microbes in the soil have access to the inside surfaces of the PolBionix pot. So in normal circumstances the PolBionix pot would be further along the biodegradation process than the pots in this trial. In this trial the Italian parsley plants had been grown in the nursery in plastic pots which were substituted with PolBionix pots immediately before planting.*

The two PolBionix pots were made from two different formulations:

1. Pot C formulation is designed to biodegrade quickly. This is to accommodate plants that would be grown in a nursery for less than 6 months and then on sold to retail customers
2. Pot D2 is designed to take longer to biodegrade. This is to accommodate plants that would be grown in a nursery for 18 months and then on sold to retail customers

**Photo** below shows the Italian Parsley plants in the second row immediately prior to planting.



Twelve months after the planting (**September 2022**) the Italian Parsley plants were dug up to assess the biodegradation of the PolBionix pots

**Photo Pot C** – roots have penetrated the base of the pot and the structural integrity of the pot is severely damaged. This result is as designed.



**Photo Pot D2** – roots have penetrated the base of the pot but the structural integrity of the pot is still largely intact. This result is as designed.



Twenty four months after the planting (**September 2023**) the Italian Parsley plants were dug up to assess the biodegradation of the PolBionix pots

**Photo Pot C** – The PolBionix pot has almost completely biodegraded with what remnants found shown.

This result is as designed and expected – the PolBionix pot which provides nutrients has been biodegraded by the microbes in the soil



**Photo Pot D2** – The PolBionix pot has lost its structural integrity and portions of the pot have biodegraded.

This result is as designed and expected – the PolBionix pot which provides nutrients has been biodegraded by the microbes in the soil. However the D2 formulation slows the rate at which the microbes in the soil can biodegrade this formulation



**Conclusion** PolBionix formulations can be used to vary the rate of biodegradation in soil and home composting conditions. Because the PolBionix formulations include the biopolymer PLA (Polylactic acid) the photos show a pathway to biodegrade PLA in mild environments including soil.