

# MICRO CLONES : DIRECT FIELD PLANTING

## MARCH 2007

*Al de Villiers*  
**ALLESBESTE**

Commercial block  
at Allesbeste  
planted with 1213  
Hass / Duke 7  
micro clonal  
plants

408 plants / Ha  
(7 x 3,5m  
hedgerow)  
Block size = 3 Ha  
(7,4 acres)





Day before planting drench the micro clonal container medium with a commercial wetting agent (Wetasoil) to prevent unnecessary water loss during and immediately after planting



Do **land preparation** well in advance before planting. Loosen the soil at the planting site and make a **slight mound** with the planting position well marked with a peg. The **irrigation system** should also be **installed** prior to planting. A **micro jet system** was installed at Allesbeste, one jet per tree, with a delivery rate of **40 litres / hour per jet**. To prevent the drying out of the root plug **after planting, apply 20 litres** (half an hour) of water the afternoon of the **day before planting** to ensure that the soil is at **field capacity when planting**.

It is important to **fence the whole area** prior to planting (visible in a distance at the truck), particularly needed in South Africa to keep the wild animals (buck) out of the block to prevent damage to the trees. As the trees are very vulnerable due to their size, it is important to introduce whatever measures needed to **protect the trees against elements for at least the first 4 to six months after planting**



23 March 2007:  
Labour carrying plants  
128/tray during the  
planting operation.  
**The ideal planting  
date - during early  
spring**, past any risk of  
late frost. Due to the  
late availability of  
plants the **planting  
date at Allesbeste was  
during fall**, which is  
not the ideal. As the  
winter temperatures  
are quite moderate in  
the Tzaneen area, the  
plants took off well.



Remove plant  
peg (pulled out)  
for planting



A specially designed planting tool was used, removing a **soil plug** in preparation for planting. The **hole is about 10mm deeper** than the length of the root plug, allowing for the plant to be planted slightly deeper than the surrounding soil surface to **prevent any exposure of the root system to the sun / drying out of the plug**



At the plant site, **press the micro clonal root plug** out of the container and **inspect the root system** for quality and quantity of roots, prior to planting **Gently place the root plug** in the **planting hole** (with damp soil).



Carefully and **lightly compact the soil surrounding the plug**, ensuring the exclusion of any air pockets that might cause the fast drying out of the root plug and **enabling a tight fit** for the root system to develop undisturbed into the orchard soil **without any planting shock**



**Planting depth** of the micro clone about **10mm below surface** level. Micro clonal medium still clearly visible before covering up with orchard soil (10mm). **To deep - risk crown rot** (stem basis) or even **root rot** (exclusion of oxygen). **Three labels** (tickets), each referring to the particular mother tree used during the cloning process. White = nurse seed (Edranol) mother tree; **yellow = Duke 7** clonal rootstock mother tree and **blue = Hass** mother tree



**Planting process completed.** Note the surface of the micro clonal plant medium well covered. Ready to be irrigated. **Budding tape (PVC) clearly visible** should only be removed after the completion of the next flush. Preferably self-removing **Para film should be used** for grafting



As soon as  
the irrigation  
block has  
been planted  
irrigate the  
plants



## **IRRIGATION**

Apply between **10 – 20 litres per tree**. Depending on the weather conditions **frequently inspect** the plants to determine their water status. **Maintain the soil moisture at field capacity** and never allow for any drying out. A **light mulch** may be applied in the **basin** to **reduce evaporation** from soil surface





**30 May 2007,  
10 weeks  
after  
planting:  
Micro clonal  
plants  
developing  
their first  
flush. Note  
the PVA plant  
protection  
still intact  
with no signs  
of sunburn.  
Budding tape  
still not  
removed**





**Micro clonal tree six months after planted as a micro clonal plant. Budding tape removed and supporting stake inserted.**



**26 August 2015: Hass / Duke 7 orchard established with micro clonal plants planted directly into the field 8 years ago on 23 March**