THE IMPORTANCE OF FIRST CLASS DRAINAGE PREPARATIONS FOR BUSH CIDER ORCHARDS

Cider apple trees, like any perennial top fruit trees, are particularly susceptible to root and crown problems during the first 5 years of life whilst the roots are shallow and occupying the top few inches of the ground. Good drainage in the top 30cms is vitally important. All under-drainage must be carried out prior to planting to avoid root disturbance to the young trees.

Under-drainage is always recommended on a new site together with permeable backfill in all but exceptional cases. Permeable backfill, a layer of stone or gravel etc, is placed over the drainage pipes to aid water from the surface layers to enter the drains below. However, it is expensive and is often omitted. In my experience this is a false economy that leads to problems and further expense in subsequent years.

Although under-drainage correctly carried out will initially improve water percolation immensely, after settling, soil types that are slowly permeable perhaps with a clayey subsoil, will subsequently require secondary drainage subsoil treatment or mole ploughing. Adequate permeable backfill material then proves essential to connect the water in the mole or subsoil channels with the lower lying under-drainage. Where no permeable backfill has been laid, secondary drainage treatments run the risk of making maters worse rather than better, causing drain 'blow-outs' and wet areas. The only solution then is to install further permanent drains with permeable backfill, and run the risk of damaging the tree roots. When a soil type indicates that mole drainage is going to be needed, systems must be installed using permeable backfill.

Following the exceptionally wet winter 2000 – 2001, many orchards suffered considerable trees losses through drowning and root death, so a survey of around 50 cider orchards was carried out. The results clearly showed that the severity of the problem could be linked with ground conditions on each site, the greatest number of fatalities occurring on sites where the sub-soil was heavy and the topsoil often rather shallow and slowly permeable [85% of cases]. In some orchards below a large catchment area for rainfall, the volume of water running off the higher land was too much for the drains to deal with quickly. A large number of sites reported that they had saved money by economising in permanent drainage preparations, some by reducing the number of drains across the site, some by not replacing the drainage slits with permeable backfill. Unfortunately these measures often resulted in a failure to remove the large volumes of rainwater that fell that winter causing widespread waterlogged soil conditions. Slowly moving, stagnant water was responsible for root and crown death by asphyxiation and drowning.

Accepted trends in our weather conditions towards increasingly unpredictable and heavy storms and prolonged winter wet, throw greater emphasis on the need to provide first-class drainage conditions that will be sustainable for 30 + years throughout the life of an orchard. Also accepting the well documented susceptibility of tree rootstocks to winter wet in their early years, high-quality, thorough drainage preparation should always be considered a priority that warrants no economising on details.

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