

Synopsis of Report given to NACM Cider Pomology Research Committee

WET FEET: Results from the questionnaire to Norton Cider Growers, contract growers to Matthew Clark Cider Co., Shepton Mallet, following heavy tree mortality caused by severe winter wet in young bush cider orchards during 2000-01.

Results from 50 replies from affected bush cider orchards indicate that from 1 – 34% of trees were showing signs of ‘wet feet’ by the end of July, up to 80% in some orchards. All rootstocks were equally affected. Although damage was usually confined to the root system around the crown of the tree, the extent of die-back of the branches and leaders seems linked to scion variety, Dabinett being most affected, followed by Ashton Bitter and Major. Trees between 3 and 5 years old were most affected. Those trees just about to come into crop for the first time were most susceptible.

From most replies, it was possible to see the obvious cause of the tree losses. Where affected trees occur in patches and ends of rows, localised compaction was often the cause. Some 10% of sick trees were attributable to wet patches of ground, often subject to winter water-logging.

Some 30% of the fatalities could be linked to wind-rock following broken stakes and ties. Tree movement causes the formation of a wet pit around the base, or pockets of water below ground level. Where this occurred, growers have been advised to replace weak, inadequate supports and spend more time re-tying insecure trees.

The severity of the problem seems closely related to the ground conditions of each site, the greatest number of fatalities occurring where the subsoil is heavy and often the topsoil is rather shallow [41% of cases] and perhaps heavy [85%]. On slopes normally well drained, this combination of soils can create temporary winter ‘springs’ as water surfaces in places where the more permeable topsoil is too shallow to hold it. Tree roots in these patches may have been without air for weeks on end. These ‘springs’, together with flooded ditches and burst drains, accounted for 25% of the problems reported.

However, inadequate under-drainage and in some incidences, no drainage treatments made during the preparation of the ground for planting, were directly responsible for 40% of the cases of flooding below ground. Of those sites that were drained prior to planting, only 25% were properly backfilled with stone, even though most had heavy or clayey subsoils. The worst mortalities occurred in orchards with no or only some under-drains, especially where the soil was less than 30cm deep. These examples clearly indicate the folly of economising on site preparation.

Some trees in some orchards are showing signs of producing new healthy bud and some useful regeneration, indicating a degree of root recovery. It is now possible to distinguish between slightly to moderately affected trees which should be worth retaining, and those which are dead or so severely affected that they are unlikely to regain economical growth.

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