

Cone moisture content

Ideally, cone moisture content (MC%) for kiln extraction of non-flexed cones should be between 18 - 21% [note: flexed cones with seed release will have a lower MC%]. The TSC obtains cone MC% of every seedlot upon arrival, which involves an overnight test. Seedlots that will be stored for a period at the TSC before kilning may slightly gain or lose moisture onsite. Therefore, shipping non-flexed cones when moisture contents range between ~17% and 24% is a reasonable goal.

For priority seedlots, if you have the ability to get accurate cone moisture content assessments just before shipping, then we may have the opportunity to load your seedlot directly from the truck into the kiln trays, if cones are ready.

We estimate cone MC% as follows:

Sampling: Collect a *minimum* of 8 to 10 representative cones (not all from the same sack); more cones is always better. Mark each cone or container first so that you can match each cone's fresh weight with its dry weight [we have used Sharpie pen on a cone, or used a Sharpie or lightly scratched numbers into a tin plate base].

Fresh Weight: Weigh the empty container [e.g. small pie or tart plate] first. Tare the scale. Add one cone to each container, and weigh each cone individually.

Oven dry: 103°C [217.4°F] for 17 - 18 hours.

Dry weight: Separately weigh each cone + container, immediately after removing from oven (they gain moisture quickly!) if you have a desiccator, you can place cones inside until weighing. Subtract the container weight from the cone + container weight; this is your oven-dry weight for the following formula.

$$\text{MC \%} = \frac{\text{Fresh weight (g)} - \text{Oven-dry weight (g)}}{\text{Fresh weight (g)}} \times 100$$

We want to see both the range in values and average cone MC% for a seedlot (some collections are more variable than others, so the average won't inform us about the cones with high moisture that are not yet ready to be extracted); please provide the individual MC% of each cone sample.