

# The Delmhorst Guide to Measuring Grain Moisture Content

## Why You Should Monitor Grain Moisture Content

Many grain types, such as wheat, rice, or oats, readily absorb moisture from their surroundings, besides having an inherent level of moisture during the growth cycle. This can severely impact the grain's quality, safety, and sale price.

For example, stored grain with excess moisture can spoil—resulting in wasted product.

The moisture content (%MC) of the grain can affect its value since grain is sold by weight.



### High Moisture

Increases the risk of spoilage and the weight of the grain vs its dry mass—which reduces the sale value of the grain.



### Low Moisture

On the other hand, low moisture means giving away free dry weight.

In either case, if you aren't tracking the moisture content of your grain product, you're leaving money on the table!



## How to Track Your Grain's Moisture Content

When it comes to tracking the moisture content of grain, there are two scientifically reliable and accurate testing methods:

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### Oven Dry Tests.

These tests check the %MC of grain by weight before and after drying a sample of grain in an air-oven. This is widely regarded as the most accurate testing method available. However, there are a couple of disadvantages to oven dry tests:



#### Speed

Oven dry tests can take a lot of time to complete, as the sample has to be dried out and weighed multiple times until the weight of the sample stops changing.



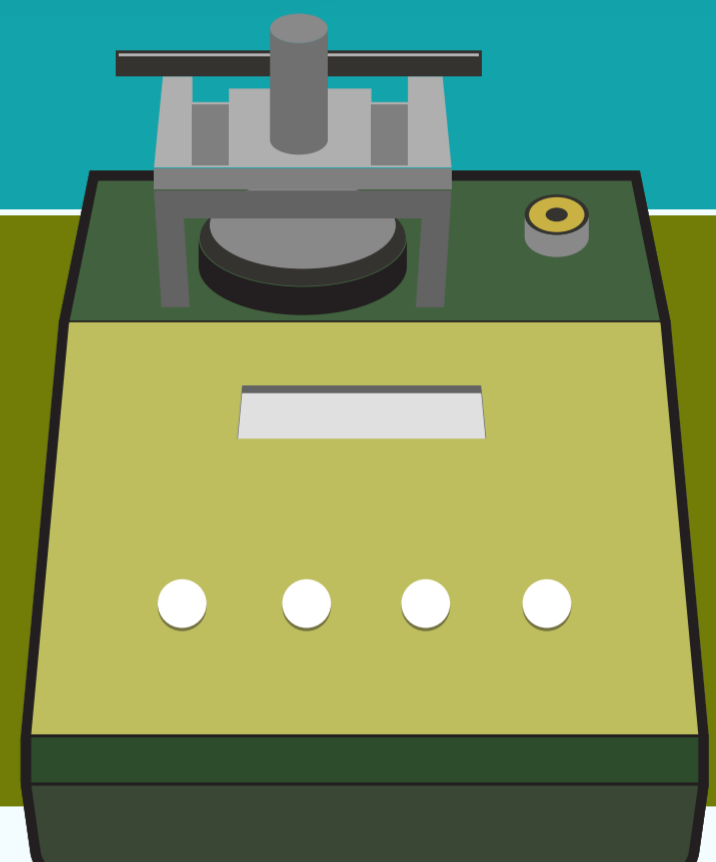
#### Need for a Skilled Operator

The accuracy of this test relies on a skilled operator who can complete the test correctly. Any mistakes can severely impact the test's results.

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### Grain Moisture Meters.

While not quite as accurate as a properly-executed oven dry test, many grain moisture meters can be accurate to within 0.2% MC of actual moisture content—more than enough for testing grain for storage or sale. Advantages of using grain moisture meters include:



#### Speed

Testing grain in a moisture meter made for grain can be completed and repeated in mere moments.



#### Ease of Testing

Using moisture meters is a relatively simple process (which will be explained below). This minimizes the risk of error and inaccuracy.



#### Thoroughness

Fast and easy testing means that you can test a larger percentage of your grain with ease, giving you a more complete idea of the actual %MC of all of your grain.

Overall, moisture meters are the most desirable way to test moisture in grain because they allow you to get results almost immediately and far more efficiently than running an oven test. Grain meters are the only option for testing grain both in the field and at the elevator.

## Using a Grain Moisture Meter

How can you use a grain moisture meter? The process is relatively simple:



**01.** Make sure the moisture meter is set to the right kind of grain to ensure accuracy. Some grain meters have over 250 built-in species corrections for different kinds of grain.



**02.** Pour the grain into the meter's cup.



**03.** Level off the grain.



**04.** Drop the contents of the cup into the testing cell.



**05.** Push the button to take a measurement of the grain's %MC.



**06.** Record your results.



**07.** Repeat steps 2-6 until you have a fair estimate of the average %MC of your entire grain batch.



## What to Look for in a Grain Moisture Meter?

When you're looking for a moisture meter to use for your grain moisture testing, there are a few things you'll want to consider, including:



#### Speed

How quickly can the meter provide you with a measurement of the moisture content of your grain? The faster you can get an accurate measurement, the better.



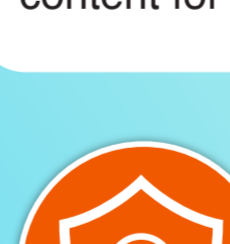
#### Accuracy

The moisture meter you use should be calibrated to a recognized standard that produces reliable, accurate measurements of moisture. Ideally, you'll want a meter that is accurate to within 0.2% to 0.5% of actual moisture content for grain.



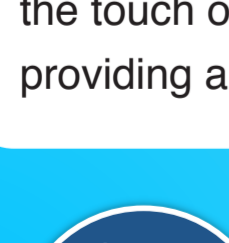
#### Calibration Checks

Having a way to check that the meter you're using is giving you accurate readings is a must. Built-in calibration checks help to do this by letting you know at the touch of a button whether or not the meter is providing accurate readings.



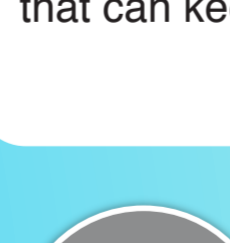
#### Reliability

No matter what the tool is, you need to know that you can rely on it to work the same way every time you use it. So, be sure to look for a rugged, solidly-built moisture meter that can keep working when you need it to.



#### Grain Corrections

There are a lot of different kinds of grain that you could grow, and each one responds differently to electricity—which affects the accuracy of the moisture measurement. This is why you need a meter with built-in grain corrections. For example, the **D999-ES** has over 250 calibrations for different kinds of grain.



#### Test Result Storage and Export

Manually recording every moisture measurement you take for grain is a time-consuming task. To thoroughly check a large amount of grain could involve hundreds or even thousands of tests. Having a meter that can store and digitally export your grain moisture test results can be a huge time-saver while also increasing the accuracy of your moisture tracking efforts.

Grain moisture meters can be an enormous benefit for agricultural personnel involved in growing, buying, or selling grain and seed products. If you need help finding the perfect grain moisture meter for your needs, be sure to contact