

A GUIDE TO FINDING
AN ACCURATE
AND RELIABLE
**MOISTURE
METER**

WHEN YOUR BUSINESS RELIES ON IT.

CONTENT

	Page No.
Introduction	3
The financial benefits of accurate moisture measurement	4
Steps to determine the right moisture meter	5
Questions you should ask about the moisture meter	11
What you need to know about the manufacturer/supplier	13
How to compare prices	14
About Kett	16

INTRODUCTION

Have you been tasked by someone in your firm to find the “best” moisture meter for your required application?

Or, are you a seasoned Quality Control, Quality Assurance, or Process Control veteran wondering why you’re looking at investing in a moisture meter again?

No matter what your reason for researching moisture meters, the problem is often the same – confusion. With so many available, it’s easy to become overwhelmed when deciding which is the best instrument to meet your need?

Knowing what to be looking for, and what questions to ask can be overwhelming. And with limited time, getting straight to the facts can be equally frustrating.

The purpose of this guide is to help you navigate the waters of the various moisture meter technologies, form factors, and companies. And assist you in selecting an accurate and reliable moisture meter for your firm, that best meets your needs.

THE FINANCIAL BENEFITS OF ACCURATE MOISTURE MEASUREMENT

There's an old adage, "you can't expect what you don't inspect" and nowhere is it more true than when measuring moisture. As we discussed above, moisture management is the key to optimizing profitability and success. However, if the moisture measurement instrument isn't up to the task, despite the best intentions and the most rigorous test plans and procedures, money, a lot of it, will be left on the table.

According to FAO (Food and Agriculture Organization of the United Nations), in 2010, 850,445,143 metric tonnes of corn were harvested. If the farmers had been able to harvest with only 1% more moisture, they would have been paid for over 8,000,000,000 kg of corn, not bad for a little upgrade in their moisture meter! As another example, the Fortune 500 companies are considered some of the largest and most successful in the world. You may even work for one. Historically the average return on sales (net profit before interest and taxes/sales) has been 4.7%. Looking at our last example, if these companies could add 1% more water to their products, their return on sales would have jumped 1% to 5.7%, or as the CFO would trumpet, profits were up 15% this year (5.7/4.7).

Again, this is just by improving the moisture management by use of more accurate and reliable moisture meters.

STEPS TO DETERMINE THE RIGHT MOISTURE METER

While there are different ways to go about the research and evaluation of moisture meters, we've outlined on the following pages, a systematic process that covers the major items to be considered.

First, assess internal requirements. This is key to ensuring you buy the right instrument with the right technology for your specific needs. To make this part of the process easy for you, before you reach out to a vendor, take the necessary time and work through the following steps with your team.

STEP 1: WHAT DO YOU NEED TO TEST?

Sounds simple, but make sure you fully understand this question and take a moment to document your answers.

Here are some questions to help you get started:

- What is the form of the product (powder, gel, tablets, etc.)?
- What is the moisture range that needs to be measured?
- Are there any other products that would benefit from an updated meter? Consolidating several products requirements with one instrument makes your company more productive and also helps your efforts to make the internal business case. A positive answer to this question may help you get the “better” instrument you want (and need)!

STEP 2: WHERE DO YOU NEED TO TEST?

Documenting each of the locations in which you may be using a moisture meter will help to determine the form factor, environmental requirements and usability required in selecting the right instrument.

Here are some questions to help you get started:

- Do you want to conduct the measurements in a pristine lab environment?
- Or do you need to take measurements out on the process line?
- Do you need to measure products upon receiving?

STEP 3: WHAT DO YOU NEED TO IMPROVE, OR FIX?

Many companies are currently testing for moisture but want to “fix” something that’s not working as expected. Understanding what you, and your staff, want to improve will help you focus on the requirements needed for a successful acquisition.

Here are some questions to help you get started:

- Do you need to make more frequent tests and the current meter takes too long?
- Is the existing meter is too complex for most of the staff to use?
- Does the existing meter alter or destroy the sample?
- Is the existing meter inaccurate or non-reliable, or does it just not work right?

STEP 4: WHO NEEDS TO USE THE INSTRUMENT?

If you are the only one that's going to use the moisture meter, great! But if others are going to use it, make sure you understand their skill sets, level of technical expertise, and the care they exhibit when handling test instrumentation.

The answer to this question may help you realize that a durable, professional-grade instrument is worth its weight in gold, and therefore, you want to focus on the details in the manufacturer's warranty plan.

STEP 5: WHAT IS YOUR BUDGET?

Have you developed a budget for the acquisition of a moisture meter? If so, how was your budget determined? Is it based on a cost/benefit analysis or something else?

If you didn't set the budget and need to do a business case for a capital purchase, spend some time communicating with your team and your financial department to understand more about how they plan for the purchase of new test instruments. If an instrument acquisition budget has already been determined, speak with your staff to understand how they arrived at this number.

There's no need discussing a technology that meets all of your requirements if you have no way of getting the purchase approved.

QUESTIONS YOU SHOULD ASK ABOUT THE MOISTURE METER

Now that you have your internal requirements resolved, questions to ask during your product research will be easier and more direct.

Make sure you cover each of the following questions with the supplier you contact. These answers will prove invaluable in giving you the confidence that they are providing you with the right solution and the best case scenario of getting your recommendations approved by your team.

Instrument Questions (Continued)

1. **Will it even measure my product?** This sounds basic but if you don't explain to the instrument supplier/manufacturee what you need to test, there's no guarantee it will work.
2. **Will it cover the moisture range I need to measure?** From the questions you've covered internally, you can discuss this with the supplier. Some measurement technologies are limited on their range of moisture.
3. **How will it compare with the current measurements I take?** If you are replacing or supplementing an existing moisture measurement method, make sure you discuss the specifics of your current method with the instrument supplier. If you are purchasing another instrument that needs to be calibrated, understand how closely it should agree (correlate) with your existing testing. The closer, the better, as it's difficult to change internal standards and alter customer expectations.
4. **Does it offer the data output I need?** If you need the measurement data to be automatically transferred to a LIMS, PLC or other data collection/monitoring system, make sure you ask the about interfacing capabilities. Better to understand the data transfer limitations and any extra costs needed to complete the project before you start!

WHAT YOU NEED TO KNOW ABOUT THE MANUFACTURER/SUPPLIER

There are a few questions to ask any representative of your prospective moisture meter supplier. Confirming that they possess a solid reputation, will develop a strong understanding of your company's needs and will address post-purchase issues in a manner that meets your expectations is essential.

Questions to ask:

1. **Have you done this before?** While hearing yes is encouraging, sometimes a "no" is what it takes to appreciate the truthfulness of your supplier.
2. **What type of guarantee can I have?** Does the supplier offer a guarantee, and if so, what does it cover? Is it just parts and labor (see the next question) or does it also cover other items like correlating with your existing method.
3. **What happens if I have an instrument problem?** Hmmm, never breaks, right? Well, if it does, how does the supplier handle their warranty? Remember, accurate, but not reliable isn't any better than reliable but not accurate, unless you plan to have a spare instrument stashed.

HOW TO COMPARE PRICES

Now that you're having these focused conversations with your prospective suppliers, you may be getting a range of budget numbers, or even firm quotes. Like all things in life, they will vary.

Not all instruments are created equal! When technology is similar between suppliers, it can be difficult to discern which is the most beneficial option. While tempting to choose a much less expensive option, you may be losing substantial value in the long term. If cheaper was better, we'd only have one car in this world, one truck model, one PC (or i-something) and one hamburger – it's important to find out why the price is different.

Pricing (Continued)

1. **One instrument is dramatically cheaper (or more expensive).** Ask more questions to find out why, probably from the company selling the more expensive instrument you are comparing. On the other hand, don't automatically assume that more expensive instrument is better. The supplier should be able to explain the features and programs that help justify the higher price.
2. **Make sure you're comparing the same thing.** Make sure you're comparing the same technology, quality of manufacturer and customer support. If you're comparing the price of a model using Technology (A) from Company A with the price of a model with Technology (B) from Company B you are truly comparing apples and oranges. It's better to settle on a company you are comfortable with that offers a variety of technologies or, decide on a measurement technology and then compare models between the competitors.
3. **Understand Total Cost of Ownership.** Initial price may not be the best way to judge total cost. The price you pay is not the price of the instrument. You may be familiar with a term called TCO (Total Cost of Ownership). This is generally the initial price, supplies and utility cost to run the instrument, maintenance/warranty costs over time, and the cost of your staff member to run the instrument. Many times, when someone spends a little time to do this quick assessment, they are very, very surprised with the result. The cost of even the most expensive solution may be very small in the bigger picture when you consider the increased profitability and efficiency your company can achieve after a successful implementation.

ABOUT KETT

Kett helps their clients by immediately optimizing their production efficiency, improving consistent product quality and increasing profitability.

In 1946 four engineers had a vision to design and manufacture portable handheld moisture analyzers. After the successful introduction of a wood moisture meter and the Riceter, which is still the standard for portable rice moisture testing today, Kett expanded into Coating Thickness Gauges.

Today, Kett helps customers immediately optimize production efficiency, achieve consistent product quality and increase profits. Offering over 200 instruments, they focus on moisture and organic composition analysis, coating thickness measurement, friction, wear, peel, adhesion and other surface property analyses, rice quality instrumentation and other test instruments for the grain and seed marketplace.

Upgrading your test instrumentation to a Kett quality product will provide you with instant improvement in product quality, reducing waste and optimal energy usage in production.

CONNECT WITH KETT

Kett publishes a range of quality content to help quality control, production managers and product development teams optimize their production of reliable products while improving profitability.

Make sure you don't miss our next blog article, Facebook post or Tweet – connect with us here:

Blog.kett.com/blog – ***subscribe today!***

Facebook.com/KettTestInstruments – ***how can we help you? Post your question on our Facebook wall.***

Twitter.com/Kettinstruments – ***start following us today to get latest on industry updates, trends and product launches***

If you'd like to improve your product quality,
production process, and bottom line with an accurate
and reliable moisture meter

– contact Kett today –

we'll put you in touch with one of our engineers to
discuss your specific need.

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