

Ag Decisions

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Moisture meters can help optimize fall profitability

VILLA PARK, Calif. — For farmers requiring quick moisture measurement in the field, traditional equipment has been too slow and cumbersome for frequent spot checks.

One conventional test, Loss on Drying, measures the total material weight change after drying.

The test involves taking a sample to an air oven for manual testing (weigh, oven dry, weigh), which can take two to 48 hours to complete depending on the standard.

Alternately, if an automated moisture balance (an integrated weighing and heating unit) is used, testing can take up to 15 minutes. Either way, such testing can be too slow when more immediate measurements, or a high quantity of measurements are required.

As a result, secondary test methods have typically been used to deliver faster results. This type of test uses an indirect method and a single conversion to achieve accurate results.

If there is a disadvantage, it is that the secondary instrument must first be calibrated to ensure accuracy. In some cases, calibration can only be performed by trained staff familiar with the equipment.



Portable single grain moisture tests can quickly measure the moisture within each grain of rice, barley and wheat, allowing farmers to determine the moisture content of individual seeds within a sample.

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Submitted photo

Tips for basic budgeting

Budgeting is a process of estimating costs and income, while projecting your net profit.

Taking the time to craft a budget allows you to create a roadmap on how you plan to spend your money and what earning potential you plan to achieve.

Simple budgets can be prepared using the following formula: *Total projected income (minus) total projected expense (equals) projected net income.*

The end of your annual business year is the perfect time to review the status of your budget and make projections for the coming year.

It's a best management practice to make an annual budget to better understand the overall picture of your finances, while keeping these five tips in mind.

Identify Your Goals

Making realistic and timely projections is important to the overall budget process.

Each year, it's important to identify the business goals that are important to you, while keeping in mind your projected long-term income and expenses.

The Act of Discipline

Managing your business or personal finances with discipline is a valuable skillset.

Whether you are a business owner or simply managing your personal finances, it's important to be able to identify both essential needs and wants on your expense list.

CREDIT CORNER



By **JOHANNA ROHRER**
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Try to ask yourself this question: Is this an expense I can and/or should afford?

Making good decisions and taking an honest approach to your business choices will help you to be more successful in budgeting for the long-term.

Do Your Research

When you prepare your budget, determining your estimated annual income and expense is an important step to the equation.

Having a reliable list of valuable resources can help guide you with items like pricing estimates, market prices, and estimated costs.

This type of research will aid in making informed business decisions, which should help you to maximize projected net income.

Stick To Your Plan

As you move along with your business decisions, you may find

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Forests able to recover faster with restoration

ZURICH — The rainforests of Southeast Asia are among the fastest declining tropical ecosystems worldwide. Researchers from 13 institutions studied an area of tropical forest in Sabah, Malaysian Borneo that had suffered heavy logging in the 1980s but was subsequently protected from further deforestation or conversion to agricultural land.

This long-term study paid special attention to the forest's capacity to rebuild biomass.

The researchers found that areas left to regenerate naturally recovered by as much as 2.9 tonnes of abo-



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According to David Burslem, last author and professor at the University of Aberdeen, scientists have known for some while that tropical forests can regenerate from logging if left undisturbed for long enough.

Meters ...

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In response, many agricultural moisture meters have simplified the process, using capacitance technology. Capacitance is a measure of an electric charge separated from a given electric potential; it exists between two conductors insulated from each other.

The dielectric capacitance technology commonly used in grain moisture meters is based on the relationship between a grain's moisture content and its dielectric constant.

As its moisture content increases, its dielectric constant increases. Since the rate at which the dielectric constant increases is different for individual grain types, a unique calibration is necessary for each grain type.

Moisture Testing: From single grains to anything

To get the best price after harvest

when growing grains, farmers often need to optimize for grain quality and consistency. This entails measuring the moisture of individual grains in different fields until the ideal statistical distribution is reached.

Today, transportable single grain moisture testers can quickly measure the moisture within each grain of rice, barley and wheat, allowing farmers to determine the moisture content of individual seeds within a sample with the results displayed on an LCD screen.

This is achieved in minutes without sample preparation.

"The number of kernels tested, the average moisture, and a histogram detailing the distribution of moisture values are displayed," explains John Bogart, Managing Director of Kett US, a manufacturer of a full range of moisture and organic composition analyzers. "This allows farmers to make immediate decisions regarding product quality and homogeneity to maximize the sale price."

"When farmers reach what they consider the optimal moisture level using a single grain moisture tester, that is the time to harvest in order to get the most consistent rice or other grain with the best yield," adds Bogart.

According to Bogart, such devices are simple to use. Farmers select the calibration, pour a sample into a hopper and press the "measure" button. Such models are factory-calibrated for wheat, brown, polished and paddy rice, as well as naked and standard barley.

The devices are versatile, capable of measuring from 10 to 1,000 kernels in each batch, at 150 kernels per minute.

When farmers need to test a wider range of agricultural products, some advanced portable grain and seed moisture meters using capacitance technology offer instant measurement and over 150 calibrations of the most common grain and seed types.

While some agricultural devices may require grain husking and grinding, no sample preparation is required with the latest generation of portable, battery powered devices.

Tests are simple. Pour the sample into the machine, and the moisture content and density (g/l) are instantly displayed. Automatic averaging enables quick spot check measurement of samples in bulk containers. To document such tests, such units offer digital output to a computer or optional printer.

In terms of accuracy, however, Bogart offers a word of caution when selecting such a unit.

"While many moisture meters using the di-electric principle claim to provide accuracy to about 0.5 percent, to achieve such accuracy it is important to look for a unit that provides automatic density and temperature compensation.

This is because changes in ambient, sample, or device temperature will otherwise degrade measurement reliability," he says.

When greater accuracy is needed across the widest range of grain, seed, or other agricultural product types, the most advanced moisture meters utilize Near-Infrared light, a highly accurate, non-contact, secondary measurement method that can deliver immediate laboratory quality moisture readings.

"NIR moisture meters follow the principle that water absorbs certain wavelengths of light," says Bogart. "The meter reflects light off the sample, measures how much light has been absorbed, and the result is automatically converted into a moisture content reading."

Unlike air ovens or even moisture balances, portable NIR equipment is designed for ease of use. With the most advanced units, the user simply points the instrument at the grains, seeds, or agricultural product.

The moisture content is instantly shown on a digital display, with results accurate to .01% in a 0-100% measurement range.

Such units, which are about the size of a camcorder and operated via user friendly menu commands, are designed for frequent spot checks wherever necessary, on both stationary and moving (i.e. conveyed into silo storage) products. Moisture measurement data can be stored in the instrument, downloaded continuously, or manually recorded.

"The goal is for farmers to be able to successfully use a moisture meter wherever and whenever it is needed. Whether out in the fields or elsewhere on the farm, this can help them determine the best time to harvest for maximum quality, consistency, yield, and storage life," Bogart says.