BARNYARDS & BACKYARDS

July 2016

UNIVERSITY OF WYOMING

UNIVERSITY OF WYOMING EXTENSION
Agriculture & Horticulture

USDA

RMA

UW EXTENSION | AGRICULTURE & HORTICULTURE | USDA | RISK MANAGEMENT AGENCY

RightRisk Analytics: A compilation of risk management tools

RightRisk Analytics combines several useful risk management tools organized into a convenient toolbox.

Users can address many of their risk management planning needs, including budgeting tools for enterprises to whole farm, machinery risk, risk-scenario planning, and financial analysis.

Budgeting Tools

The **Machinery Risk Calculator** helps producers determine total machinery costs and estimate and evaluate the risk sensitivity of these costs to future changes in input factors. The tool uses a comprehensive list of related expenses to calculate an overall cost, including: expected life values, repairs and depreciation, housing, insurance, taxes, and annual use.

The tool analyzes costs on powered equipment (tractors, windrowers, etc.) and up to three different implements, as well as vehicles, powered irrigation equipment, non-powered irrigation equipment, and actual field operation costs. The results show the risk sensitivity of the particular machine or activity to future uncertainty of selected input variables; in other words, the probability of a selected cost per acre being at or lower than a selected value.

The **Enterprise Risk Analyzer** allows users to enter income and expense information for their entire business and then use the tool to allocate this information over the enterprises in the operation. The tool can evaluate different enterprises in several ways. It can estimate the profitability of each enterprise on its own as well as evaluate it against other enterprises in terms of profitability, capital allocation, and other efficiencies.

The largest expense categories for each enterprise are then identified, helping show if improvement is needed, and users are able to assess breakeven prices and yields for each enterprise and their effects on each other, as well as projecting them over time.

The **RD Financial** tool helps better understand how the information from various financial statements relates to the financial performance of an operation and provides a blueprint of how to use that information in a producer's operation. The tool makes financial statements and the information they contain, as well as various financial ratios, easy to understand and show the effects of changes in financial decisions on the financial picture.

The Risk Navigator Toolbox

The Risk Navigator toolbox is based on the Strategic Risk Management Process (SRMP), a 10-step process for strategic risk management. SRMP is designed to help agricultural producers more fully address the different areas of risk in their businesses by developing a sound plan for managing risk. The toolbox contains 25 tools ranging from setting risk goals, assessing risk tolerance, to cash flows and balance sheets and financial ratio analysis.

Risk Scenario Planning Tool

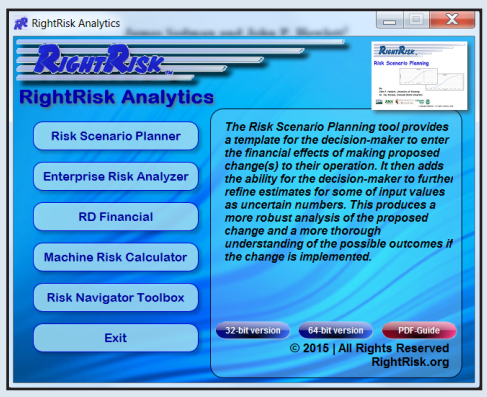
The Risk Scenario Planning Tool (RSP) helps producers evaluate a wide range of values when making budgeting projections or production decisions. The RSP tool can help a manager quantify the risk values associated with a particular decision or change in the operation being contemplated.

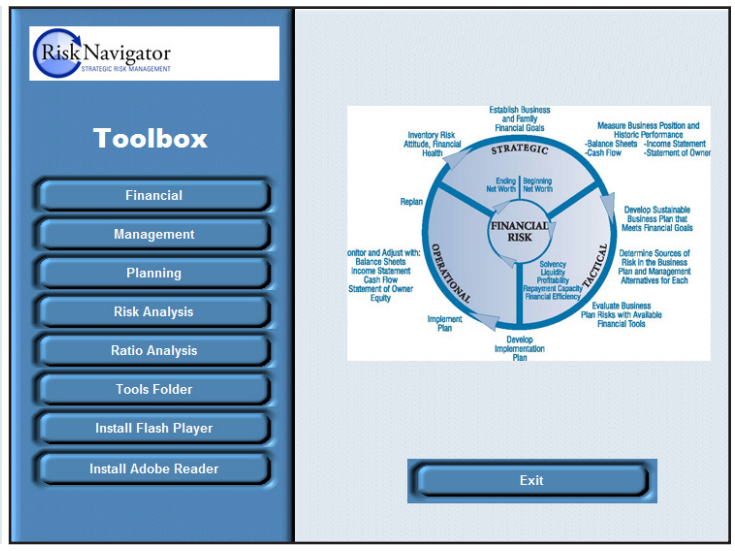
Most producers have a firm grasp on some budget projections, such as input costs, but many values used in budgets are often a best guess. Managers can eliminate the guessing by using the RSP tool and begin using more accurate values in those budgets.

For more information

Producers have access to numerous resources from RightRisk.org across the entire risk-planning spectrum: from those just starting out to those seeking advanced planning resources.

To download RightRisk Analytics tools from the "Resources" menu, select "Risk Management Tools" and select RightRisk Analytics. For other online resources in addition to those in the analytics toolbox, including online courses, presentations, example producer profiles, and other tools, simply logon to RightRisk.org.





James Sedman *is a consultant to the Department of Agricultural and Applied Economics in the University of Wyoming College of Agriculture and Natural Resources, and* ***John Hewlett*** *is a farm and ranch management specialist in the department. Hewlett may be reached at (307) 766-2166 or hewlett@uwyo.edu.*

Water quality can affect pesticide application effectiveness

Anyone who has sat through our private or commercial pesticide applicator training has certainly heard us harp about reading the label, calibrating the sprayer, wearing the proper protective equipment, proper application timing, and so on.

Water quality is a consideration you may not be aware of, specifically the water temperature, pH, and total suspended solids (turbidity). These can decrease the effectiveness of an application and should be considered.

Water Temperature

Research out of Purdue University has shown that water at temperatures around 41 °F or around 133 °F can have a negative effect on weed control with certain pesticides and certain weeds. Weeds they tested included giant ragweed, horseweed (marestail), Palmer amaranth, and pitted morningglory. See Table 1 for results. Though only preliminary, the data show there is some value in considering the temperature of the water used to mix your spray tank. Taking steps to avoid using water that is too cold or hot may help the application to be more effective.

Herbicide	Water Temperature (°F)			
	41 °	72 °	102 °	133 °
2, 4-D choline	✗	✓	✓	✗
Glufosinate (Liberty)	✗	✓	✓	✗
Mesotrione (Callisto)	✗	✓	✓	✗
Glyphosate plus dicamba (premix)	✗	✓	✓	✗

✗ – herbicide performance was reduced on some weed species at this temperature
✓ - herbicide performance was not reduced at this temperature

Water pH

Most herbicides, insecticides, and fungicides are formulated at a pH of 4.0 to 6.5, meaning they are slightly acidic. When mixed with water that is closer to neutral (a pH of 7.0), or, more typical of Wyoming water, a pH of 8.0 to even 9.0, the pesticide can fall out of solution or may begin to break down. This process is called alkaline hydrolysis. The time it takes depends on the pH of the water and the product's half-life. The half-life being the time it takes for half the substance to break down.

For example, the herbicide Flumioxazin is very stable at a pH of 5, but at a pH of 7 the half-life is 24 hours. This is reduced to 15 minutes at a pH of 9. It has been shown that this process speeds up as the water temperature increases. It's also important to note some herbicides, such as the sulfonylurea herbicides, perform better in slightly alkaline water. Be sure to read the label for any specific instructions or warnings.

There are steps that can be taken if you have high pH water, such as adding a buffer, to make the water more suitable for pesticide applications.

To have water tested at the Wyoming State Water Laboratory in Laramie, call (307) 742-2984 to get a kit and instructions on proper sampling. You can also contact a local University of Wyoming Extension office for information on other lab options.

Water Turbidity

Turbidity, or amount of suspended solids in the water such as soil particles, salt, or organic matter, can also decrease pesticide effectiveness by sticking to or being absorbed by the pesticide molecules. This in turn makes them unavailable to do their job within the spray solution. Surface water sources are more prone to this, but any water source can potentially be a problem.

Good filtration and careful selection of a water source is important. Cleaning out the spray tank between applications to minimize any contaminant in your next application is also important.

Many factors can affect the success of a pesticide application. Water quality is not often discussed. We often may blame other issues when, in reality, if the water was tested, we may find water quality is the culprit. Consider the quality of water the next time you get ready to spray. For more information, go to bit.ly/pestwtrqual.

Caleb Carter *is a University of Wyoming Extension educator based in Goshen County and serving southeast Wyoming. He can be reached at (307) 532-2436 or ccarte13@uwyo.edu.*