

## The difference between water content and water activity



Many food processors try to get control of their safety issues by measuring moisture content. Moisture content IS useful for certain production parameters, but when considering food safety, **moisture content measurements are crude at best and misleading at worst.** Moisture content is all about quantity--how much water. WATER ACTIVITY ( $a_w$ ) is about quality.

### BELOW CERTAIN $a_w$ LEVELS, MICROBES SIMPLY CAN'T GROW.

Water in a product doesn't sit in a pool, it's "bound up" in various chemical bonds. "Bound" water is unavailable water--it's not "free" to be used by microbes and bacteria.

If enough water is bound, microbes can't grow. **USDA guidelines** state:

*"A potentially hazardous food does not include . . . a food with a WATER ACTIVITY value of 0.85 or less."*

[A simple chart](#) shows water activities below which certain molds will not grow. And there's just one chart, whether you are measuring the water activity of brie or of dog food.

**The following four stories illustrate why water activity, not water content, is the key to product quality and safety.**