

KUNI Radio Series “Unplugged”
Show #49: Moisture on Windows

From the Center for Energy & Environmental Education at the University of Northern Iowa, this is Pat Higby with a series of programs on Iowa Public Radio KUNI to help you save energy.

Was it your job to fill the humidifier with water when you were a kid? Humidifiers were a common appliance before the 70's, so if your answer was “yes,” you're showing your age! Our houses then were pretty leaky, and lots of dry, cold air seeped through cracks and windows, causing lots of static electricity and dry nasal passages. As the price of heating fuels rose, we sealed up our houses and trapped humidity from cooking, showers, and baths indoors. If your house is fairly tight, you probably don't need a humidifier any more. In fact, you may have a problem with excess moisture during the heating season.

What harm can a little moist air do? Quite a bit! First, there is the potential for mold growth, which can be a health hazard. Second, condensation causes deterioration in building materials. So how do you know when there is too much moisture in your home?

One indicator can be your windows, since moisture condenses on cool surfaces. If you see moisture on your windows, it's a pretty good indication that your home is too damp. But if you have storm windows, double or triple glazed windows, or inert gas-filled windows the glass temperatures will be warmer, and you won't see moisture. You've lost an early warning signal that your home is too moist. As an alternative, you could use a humidistat to actually measure the relative humidity in your home.

If relative humidity falls below 20% nasal passages dry out and defenses against infection decreases, so 25% relative humidity is a good minimum value to aim for. The upper limit will vary based on two factors. If your home is very well insulated with good windows the interior surfaces won't get as cold, and you can have higher relative humidity in your home without damage. The second factor is temperature. When it is really cold outside, the interior surfaces of your home get colder, too, and water is more likely to condense. So in Minneapolis the average home should have 25% relative humidity, but in Cincinnati it can have 35% relative humidity without problems.

In summary, the ideal relative humidity is, well, relative. I wish I could give you exact numbers, but I can't! And as I've already said, checking your windows for moisture is no guarantee, either. My best suggestion is for you to watch the exterior corners of your home. That's where the wind moves fastest, and your home has its greatest heat loss. If you have moisture on your walls there, you need to reduce your home's humidity!

I'm Pat Higby, Energy Educator at the Center for Energy and Environmental Education at the University of Northern Iowa.

Source: Joseph Lstiburek and John Carmody, Fundamentals of Moisture in Houses, 1993, <http://www.homeenergy.org/archive/hem.dis.anl.gov/eehem/95/951108.html>