



# Walking on Eggshells

Keeping eggs—and hens—safe

BY DAVID SCHARDT

## Mice, Maggots, & Manure

After Robin Shaffer and U.S. restaurant-goers in at least 10 states became ill from tainted eggs last May, epidemiologists fingered the likely source: two factory farms in Iowa that together produce more than a billion eggs a year.

When inspectors from the U.S. Food and Drug Administration (FDA) finally descended on the two farms in August, they found that the companies' laying houses, which each held tens of thousands of caged hens, were infested with flies, maggots, wild birds, and rodents.

Chicken manure was piled four to eight feet high below some of the cages. Any of that might have been the source of the *Salmonella*.

"There is no question that these farms were not operating with the standards of practice that we consider responsible," said FDA Commissioner Margaret Hamburg.

While the companies agreed to recall a half billion of their eggs, by that point most of them had probably already been eaten. None had been exported to Canada, U.S. officials reassured the Canadian Food Inspection Agency (CFIA). But the outbreak still raised questions about domestic factory farming.

"Massive egg recall opens window on inhumane farming," read the headline in *The Globe and Mail*.

"It's the worst thing I've ever been through," Robin Shaffer recalled. "I had no energy. The pain. You'd try to keep something in you and it just comes out."

When Shaffer ate an enchilada, bean burrito, and chile relleno combo meal at a Mexican restaurant in Bemidji, Minnesota, in May, she had no idea that a raw egg tainted with *Salmonella* bacteria had contaminated her food in the kitchen. That would knock Shaffer off her feet for three weeks. "My life was literally the toilet," she told a local TV station.

Shaffer and six other diners at the restaurant were among the first of what would become more than 1,600 documented victims of one of the largest outbreaks of *Salmonella enteritidis* food poisoning in the United States since the U.S. government began compiling statistics in 1973.

While none of the victims were Canadian, the *Salmonella* outbreak renewed a national debate about how eggs are produced. Is it cruel to cram hens into tiny cages with no room to nest or perch? Are "cage-free" eggs more humane? Are they less likely to make people sick?



**Too close for comfort.** A typical caged hen lives in an area no bigger than this page.

"We basically have an identical system of producing eggs in Canada as in the United States, the only difference being the size of the farms," says Leanne McConnachie, director of farm animal programs at the Vancouver Humane Society in British Columbia.

"They have those super large farms; ours average about 18,000 birds."

That may partly explain why "large outbreaks specifically linked to raw shell eggs are uncommon," as the Public Health Agency of Canada notes. (The last major *Salmonella* outbreak from eggs was traced back to a British Columbia bakery in 2000.)

Even so, the hens in a typical Canadian egg operation don't have a very pretty life.

## Crowded Hens

About 97 per cent of the eggs produced in Canada are laid by hens that are confined for their lifetimes in battery cages, typically five to seven hens to a cage. (The cages are arrayed in "batteries"—rows of cages stacked one atop another.)

Within each cage, every hen has about 430 square centimetres of floor space, less than the size of this page.

"You've got these hens sleeping, eating, laying their eggs, and defecating all in that tiny space for 12 to 18 months," says McConnachie.

That's not enough room for them to

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## Egg Tips

The vast majority of eggs are *Salmonella*-free. These tips will help keep you that way too:

- Refrigerate eggs as soon as possible in their original carton in the coldest part of the refrigerator (usually the body of the fridge, not the door). Discard cracked or dirty eggs.
- Wash your hands, cooking utensils, and food preparation surfaces with soap and warm water after contact with raw eggs.
- Cook your eggs thoroughly to at least 75° C (165° F), or until both the white and the yolk are firm. (*Salmonella* could be in either part.)
- Eat cooked eggs promptly. They shouldn't be kept warm (like in a steam table at a restaurant) or at room temperature for more than two hours.
- Avoid dishes made with raw or undercooked eggs. That includes homemade (or restaurant-made) Hollandaise sauce or Caesar salad dressing. Commercially bottled versions are okay.
- Try pasteurized egg whites like Egg Beaters in place of regular eggs.

Sources: Health Canada, U.S. Centers for Disease Control and Prevention.

stretch their wings or engage in other natural activities—like nesting, perching, and rolling around on the ground (dust-bathing).

“One of the most fundamental behavioural needs of a hen is to lay its eggs in a private, dark, secluded nesting area, but battery cages don't allow them to do that,” notes McConnachie.

“They're born with that instinct, and they get extremely frustrated when they can't find a suitable place to nest and lay their eggs.”

A far smaller number of hens—just 2 to 3 per cent of the laying hens in most provinces (12 per cent in British Columbia)—live in indoor “cage-free” houses, where they can walk around, spread their wings, lay their eggs in nests, and, in some facilities, perch and dust-bathe. Hens that lay organic eggs can wander outdoors.

The list of places where Canadians can find cage-free eggs is growing, albeit slowly:

- Some grocery stores, including Safeway and Whole Foods Market, have shifted from battery-cage eggs. So have a number of independent restaurants. (Large chains generally haven't made the switch.)
- The dining facilities at 16 Canadian universities, including McGill University, the University of Guelph, Concordia University, and the University of British Columbia, have switched to cage-free.
- This summer, the world's two largest cruise companies, Carnival Cruise Lines and Royal Caribbean Cruise Lines, announced that they will begin converting to eggs

as well as restaurants and grocery stores, to use or sell eggs from cage-free hens.

But the move to cage-free involves more than concern about the treatment of hens. Many people are convinced that cage-free eggs are less likely to harbour *Salmonella* and other contaminants.

“The evidence suggests that cage-free facilities have significantly lower risks of *Salmonella* infection,” says Paul Shapiro of The Humane Society of the United States.

But that evidence comes from European studies, and it's not clear whether their results apply to Canadian egg operations.

In 2004 and 2005, the European Food Safety Agency took samples from more than 5,300 egg-laying facilities in 24 countries. “Across the board, it found a higher risk of *Salmonella* in the caged facilities,” says Shapiro.

Since Canadian egg farms are closer in size to European farms than they are to U.S. farms, the same may be true in Canada. But there have been no Canadian studies, so there's no way to tell for sure.

from cage-free hens.

Why the movement to cage-free production? In part, because it results in better living conditions for the hens.

“To me, it's just being aware of how your food goes from here to on your plate and you get to make the decision on what you want to support,” says councilwoman Barbara Butters of the southern Ontario city of Port Colborne.

Butters led the effort to pass a resolution that ended the use of eggs from caged hens in all city facilities. Port Colborne is also encouraging its citizens,

## Feeling Sick?

If you become infected with *Salmonella enteritidis*, you'll typically develop fever, abdominal cramps, and diarrhea beginning 12 to 72 hours after you eat a contaminated food. You'll most likely be sick for four to seven days.

Most victims don't require treatment other than drinking plenty of fluids. Antibiotics usually aren't necessary. But the diarrhea can be severe, and some people require hospitalization and rehydration with intravenous fluids.

In rare cases, a *Salmonella* infection spreads from the intestines to the bloodstream. That can be fatal unless the person is treated promptly. It's more likely to happen to the elderly, infants, and those with impaired immune systems, says the Canadian Food Inspection Agency (CFIA).

Sources: Canadian Food Inspection Agency, U.S. CDC.

## The Bottom Line

- Eggs are an inexpensive source of protein. But a typical yolk contains roughly 200 milligrams of cholesterol. That's two-thirds of Health Canada's 300 mg daily limit for healthy people.
- Eggs are cheap enough that many people can probably afford to pay extra for cage-free or organic eggs that are more humanely produced than battery-cage eggs.

## What Does It Mean?

You can't believe everything you read on an egg carton. Some claims mean something, while others don't.

Here are some common claims...and some claims that we wish were more common.

### Certified Claims

*These are claims you can trust. In each case, hens are provided with perches, nest boxes, and dust-bathing areas, and de-beaking is only allowed—with permission of the certifying agency—if all other efforts to prevent hens from harming each other have been tried first.*



#### Canadian Organic

**Regime:** Hens are raised free-range with access to the outdoors for a minimum of one-third of their lives. They are also fed an organic diet. The program is audited by organizations that are certified by the Canadian Food Inspection Agency (CFIA).



#### Quality Assurance International Certified Organic:

Hens are raised free-range with access to the outdoors, but with no minimum time specified. The program is audited by Quality Assurance International, Inc., of San Diego, California.



#### British Columbia Certified Organic:

Hens are raised free-range with access to the outdoors for a minimum of one-third of their lives. They are also fed an organic diet. A program of the Certified Organic Associations of British Columbia.



#### SPCA Certified:

Hens are raised either free-range with access to the outdoors or free-run inside a barn. A program of the British Columbia Society for the Prevention of Cruelty to Animals.



#### Animal Welfare Approved:

Hens are raised with continuous access to the outdoors. A program of U.S.

Animal Welfare Approved, of Alexandria, Virginia.

### Uncertified Claims

*If the eggs have not been certified by one of the organic food organizations or animal welfare groups, these claims have not been verified. That means they're as honest as the companies that make them.*

**Free-run:** Cage-free hens that can roam freely inside a barn without access to the outdoors. Cage-free hens typically are allotted two to three times more space than caged hens.

**Free-range:** Cage-free hens that have some access to the outdoors.

### Claims that May Not Mean Cage-Free

If the carton says "natural," "omega-3," "farm fresh," or "vegetarian-fed," and doesn't also say "free-range" or "free-run," then the eggs probably came from hens that were confined to battery cages.

### Nutrient Claims

Caged and free-run hens typically eat the same corn-based diet, so there's no nutritional difference between their eggs. But some producers supplement their hens' diets with ingredients that raise the level of some nutrients.

For example, National Egg Inc. of Strathroy, Ontario, trumpets the "bright, golden" yolks of its Omega Choice eggs, which the company says contain 1,000 micrograms (mcg) of lutein, a carotenoid that may help slow the progression of cataracts and macular degeneration. The extra lutein comes from marigold flowers that are added to the hens' diet. (A regular egg yolk contains about 150 mcg of lutein.)

A thousand micrograms of lutein is 10 per cent of the amount being tested in a large U.S. study. (It's the same amount you'd get in a half-cup of cooked broccoli.)



### Omega-3 Claims

"Not all omega-3 eggs are created equal," warns Mary Van Elswyk, a

U.S. dietitian and omega-3 consultant in Longmont, Colorado.

"You need to know which omega-3 fatty acids you're interested in and how much of them the eggs contain."

**DHA** and **EPA** help reduce the risk of heart attacks, lower blood triglyceride levels, and are key constituents of brain cells and the retina. They're found most plentifully in fatty fish like salmon. A 3½ oz. (100-gram) serving of cooked salmon contains roughly 1,200 milligrams of DHA and 600 mg of EPA.

The third omega-3 fat—**ALA**—doesn't protect the heart as much as DHA and EPA do. Most Canadians get enough ALA from margarine, mayonnaise, salad dressing, and other foods that are made with soybean or other vegetable oils.

A typical egg naturally contains about 25 mg of DHA and 25 mg of ALA. So if a carton claims that its eggs contain omega-3s but doesn't say how much, or if it boasts that it has 50 mg of omega-3s per egg, "chances are, it's actually just an ordinary egg," says Van Elswyk.

Last summer, U.S. health authorities said that eating seafood twice a week that provides an average of 250 mg a day of DHA plus EPA is associated with a lower risk of fatal heart attacks in people with or without heart disease. They also concluded that there isn't enough evidence that ALA can do the same.

A few companies feed their hens fish-meal or algae, which can get the DHA up to about 100 mg per yolk. By feeding their hens flaxseed or canola oil, they can easily boost the ALA to 350 mg or so.

So if a carton boasts that its eggs have 300 mg or more of omega-3s, you can assume that most of it is ALA, and not the more desirable DHA and EPA. 🐔

Sources: Vancouver Humane Society and others.