



10-Step Guide to Lowering the Sodium in Food and Beverage Products

People love salt. Among the basic tastes — sweet, sour, bitter and salty — salt is one of the hardest ones to live without. And it's no wonder. Salt, or sodium chloride, helps give foods their taste appeal — in everything from bacon, pizza, cheese and french fries to pickles, salad dressings, snack foods and baked goods.

Beyond enhancing the flavor of foods, salt, which contains 40 percent sodium and 60 percent chloride by weight, plays other important roles in food processing. It acts as a preservative by inhibiting the growth of microorganisms that cause spoilage. It serves as a texturizing aid by strengthening gluten in bread dough; improves tenderness in cured meats and consistency in cheese; and controls fermentation in foods such as baked goods and pickled products. It also helps improve color and aroma.

In addition to the important roles that salt plays in food production, sodium — one of the key components of salt — is an essential nutrient, a mineral that the body cannot manufacture on its own but which is required for life itself and good health. Sodium serves many important

functions in the body, including maintaining water and acid-base balance, transmitting nerve impulses, regulating muscle contractions, and absorbing and transporting other nutrients.¹

Yet for all of these benefits, sodium, and by extension salt, has come under increased scrutiny from consumer interest groups, health care organizations and government agencies as high-sodium diets have been associated with high blood pressure, heart disease and stroke. It's now estimated that almost one in three Americans have high blood pressure,² but only 30 percent are doing something about it.³

Current U.S. Department of Agriculture (USDA) dietary guidelines recommend that healthy adults consume no more than 2,300 milligrams of sodium daily.⁴ The average American typically consumes around 4,000 milligrams of sodium per day⁵ — with an estimated 75 percent of this intake coming from processed foods.

These factors are contributing to an increased interest in low-sodium products and commitments from the food industry to develop effective reduced sodium solutions. The market for reduced sodium foods is estimated to be \$6 billion — and growing. In fact, introductions of products carrying low-salt or low-sodium claims more than doubled from 102 in 2002 to 209 in 2007, according to Packaged Facts.

Today, in addition to simply reducing the amount of salt added through the production process, there is a wide assortment of products available to help manufacturers reduce, replace or eliminate salt, and therefore lower the sodium content of their food and beverage products.

However, before jumping into the reduced sodium market, food processors should consider several steps. These steps not only ensure the best formulations, but also maintain the product's flavor characteristics and, most importantly, consumer satisfaction.

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HERE ARE 10 THINGS TO CONSIDER:

1. IDENTIFICATION

Identify your goals, objectives and target audiences. Why are you doing this? Are you trying to market the product as a “better-for-you” item and/or meet government requirements for specific levels of sodium? Are sodium-reduction targets part of a new or revised nutrition policy within your company? What do you expect to achieve in terms of sales and market share? Who is your target consumer? Will the product meet the needs of your entire target market, or just a portion of the group? Or will a low-sodium alternative open up entirely new market opportunities for you? Take a good look at the target consumer — not just demographically, but get to know their attitudes and behaviors as well. You may discover some key consumer insights that will help you determine the chances of success for a low-sodium product and identify ways to connect with your target on an emotional level.

2. KNOW THE COMPETITIVE LANDSCAPE

With so many new low-sodium products out there, consider what already might be available in the category and how those products are doing. Will you be able to achieve a first-mover advantage? What levels of reduction have your competitors been able to realize and through what means? How are your competitors positioning their products — and at what price? How will you be able to differentiate your product?

3. UNDERSTAND THE SOURCES OF SODIUM

Understand all of the sources and levels of sodium in your product. Some foods naturally contain sodium. For example, all foods that come from animals contain sodium, and some plants, such as beets, carrots, celery and spinach, contain more sodium than others. If the chicken and vegetables used to make your chicken noodle soup contain sodium, either naturally or through other added ingredients, take that into consideration as you look for ways to reduce sodium in your product. Other ingredients that contain sodium include: sodium nitrate, sodium benzoate, sodium bicarbonate and monosodium glutamate, which are often used in food processing. All of these sources need to be factored into your plans.



Cargill's SaltWise™ system can help manufacturers reduce sodium levels by 25-50 percent without sacrificing flavor and is designed for a variety of food processing applications.

4. SET TARGETS FOR SODIUM REDUCTION

Set realistic target levels for sodium reduction for your product. Determine whether you'll be able to achieve these target goals without significantly compromising the quality (spoilage) or desired product attributes (e.g., taste, texture, etc.). Also consider whether you might want to make a health claim. The following claims can be used on food labels to describe the sodium content of foods, per sodium guidelines set by the Food and Drug Administration:⁶

- Sodium free: product contains 5 milligrams or less of sodium per serving
- Very low sodium: 35 milligrams or less of sodium per serving
- Low sodium: 140 milligrams or less of sodium per serving
- Reduced sodium: the product's usual sodium level was reduced by at least 25 percent
- Unsalted or no salt added: no salt added during processing; however, the product may still contain sodium

Additional detailed labeling information can be found in the Food and Drug Administration Regulations.⁷

5. ASSESS YOUR SODIUM-REDUCTION OPTIONS

There are many ways to reduce the amount of sodium in your product. Each of the options offers different levels of reduction and can be considered alone or in some combination. You can:

- Reduce the amount of salt added to the product formula or through the production process

- Change the proportion of salt added to the ingredients or modify the flavor combination
- Replace some or all of the salt with a salt substitute, potassium chloride and/or an alternative flavor system or seasoning

You'll also want to determine whether to reduce the amount of sodium gradually over time or work to achieve the target reduction levels all at once.

6. CONSIDER PROS AND CONS

Evaluate the pros and cons of each of the sodium reduction options. Will the choice change the desired quality attributes (e.g., taste appeal) of the product and potentially alter consumer buying behaviors? Will the food spoilage or shelf life be compromised by the change? This is also a good time to consider the costs versus the benefits as they relate to the complexity of the reformulation and the replacement options. Is it feasible to reduce sodium without replacing equipment or making drastic production changes? How quickly will you be able to recoup those costs? Also, what are the costs of the particular replacement option you hope to use? Options such as potassium chloride and alternative flavor systems are more expensive, so understanding your target consumer and their willingness to pay more for a reduced sodium product will help you weigh the pros and cons.

7. TEST, TEST, TEST

Consumers will choose to buy your product and make repeat purchases as long as the sensory quality attributes meet their expectations. Take product testing beyond the lab and extend it to consumers. Before deciding whether the product is acceptable for launch into the

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market, you may want to evaluate the product for acceptability at various levels of salt reduction and with various replacement options through consumer sensory testing. Test consumer reactions to determine how the product performs on overall liking, purchase intent and relevant product attributes to ensure that it meets your overall objectives. In addition to product testing, test your advertising and other marketing efforts to see how consumers react to your messages and claims. Make adjustments as necessary before the introduction.

8. DETERMINE HOW TO PRESENT THE INTRODUCTION

Based on what you've learned, determine how you will introduce the product. Is it better to position your reduced sodium formulation as a new product? Or is it better to make it a reintroduction? Did you decide to make a health claim? Do you mention the reduction at all? Or, do you keep it stealth? The answer will depend on what your identified objectives are, who you are trying to reach and what your testing efforts are telling you.

9. EVALUATE YOUR SUCCESS

After the product has been introduced, now it's time to measure the success of the product introduction. Did it meet or exceed sales goals and expectations? Is your positioning on target? Measure the entire effort for effectiveness and efficiency; then assess the results in terms of changed perceptions and desired purchase behavior.

10. MODIFY AS NEEDED

Monitor consumer opinion and response to the product; continue watching trends to make sure it meets objectives and satisfies the needs of the target. Keep tabs on competitors and emerging nutritional recommendations. Identify any unanticipated reactions and make needed refinements.

When developing lower sodium products, remind target consumers that such products are only part of the total picture in developing a healthier lifestyle. Eating a wide variety of foods from all the basic food groups, combined with exercise and their doctors' recommendations, are all important considerations to an overall health management program.

Cargill: WORKING TO BE THE PARTNER OF CHOICE FOR FOOD PROCESSORS

Cargill offers seamless solutions for expanding your product line with lower-sodium choices. We offer a full portfolio of salt alternatives to meet your needs, including our SaltWise™ sodium reduction system, which can reduce sodium in foods between 25 and 50 percent, while still delivering the same great salty taste your customers crave. To learn more, call 1-888-385-SALT (7258).

SOURCES:

- 1 Salt Institute, "Salt for Human Nutrition," www.saltinstitute.org. Oklahoma Cooperative Extension Service, "Dietary Salt and Sodium," Fact Sheet T-3142, Oklahoma State University, www.osuextra.com
- 2 Centers for Disease Control, Division for Heart Disease and Stroke Prevention, High Blood Pressure Fact Sheet, www.cdc.gov
- 3 Health Day, "High Blood Pressure Stalks Many Americans," www.healthday.com, Nov. 21, 2008
- 4 USDA, Dietary Guidelines for Americans 2005, www.health.gov/DietaryGuidelines
- 5 *USA Today*, "Some Food Products Giving the Boot to Excess Salt," Nov. 24, 2008
- 6 American Heart Association, "Sodium Guidelines Set by the FDA," www.americanheart.org
- 7 Federal Register, Department of Health and Human Services, Food and Drug Administration, 21 CFR Part 101, www.cfsan.fda.gov



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