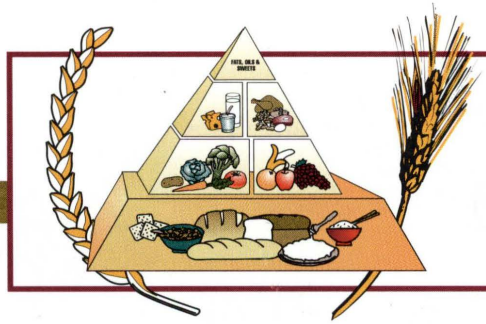


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Producing Virginia's Small Grains For Human Consumption

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Small grains is a term used to describe cereal crops such as wheat, barley, oats, and rye. The "small" refers to the size of the seed as compared with large grains such as corn. The production and consumption of wheat and barley in the Commonwealth of Virginia have significant economic impacts and health benefits for both its citizens and agricultural communities.

Production Efficiency

Virginia producers have increased their wheat and barley yields by over 50% in the past two decades (Figures 3 and 4). Wheat and barley yields are traditionally expressed in bushels per acre. A bushel of wheat weighs 60 pounds and a bushel of barley weighs 48 pounds. The yield of wheat has remained in the 40-50 bushels/acre range nationally, but good producers in Virginia are averaging over 75 bushels/acre. Barley yields in Virginia have averaged over 80 bushels/acre with some producers consistently averaging over 100 bushels/acre. These increased yields make Virginia one of the best places in the world to grow wheat and barley.

Wheat And Barley Production In Virginia

Soft red wheat and barley production is big business in Virginia. In 1999, 260,000 acres of soft red wheat were harvested in Virginia to produce 14 million bushels or a net worth of approximately \$42 million dollars! That same year 60,000 acres of barley were harvested to produce 4.9 million bushels or a net worth of over \$8 million. Agricultural production is very diverse in the commonwealth. Wheat and barley are grown over much of the state, but the largest acreage is in eastern Virginia (Figures 1 and 2). The greatest concentrated acreage for wheat is in the two Eastern Shore counties of Accomack and Northampton. Barley production is concentrated in the Northern Neck and Middle Peninsula.



The future of wheat and barley production in Virginia is encouraging and can be improved by expanding local and international markets. Consumers need to learn about and adopt nutritional habits based on the Food Guide Pyramid (Page 2). Contact your local Virginia Cooperative Extension Agricultural Agent for technical publications and a video on "Intensive Soft Red Winter Wheat Production" (424-803).

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“For Amber Waves Of Grain”

Wheat - long known as the staff of life - has served mankind throughout history as one of the main components of diets worldwide. The song, “America, the Beautiful,” refers to “...amber waves of grain.” This strong visual image portrays one of America’s most bountiful and nutritious crops blowing in the early summer breeze just before harvest. Each and every day, from breakfast through dinner, wheat makes a significant and important contribution to the human diet.

Barley is another small grain also widely produced in the world. It is an ancient crop that has been grown for food in Ethiopia and Japan for centuries. In the United States, barley is mainly grown as a grain feed for livestock. Also, it is used in human food sources such as pearled barley to make soups, casseroles, desserts, and snack foods. Barley also is milled into flour and used as a malted (germinated) grain to produce beer. There is growing interest in barley as human food due to its high soluble fiber level that reduces blood cholesterol levels.

Eating Virginia Grains

Small grains grown in Virginia are healthy foods that can decrease your risk for heart disease and cancer, which are the two leading causes of death in the commonwealth. Your eating habits and food choices affect your health by promoting, preventing, or delaying the onset of chronic diseases. Research results consistently have shown that eating a diet that is high in whole grains, fruits, vegetables, and low in fats decreases the risk of heart disease and cancer. **For example, it is estimated that as many as 1/3 of all cancers may be prevented by making healthy food choices.**

How Can You Reduce Your Health Risks and Protect Yourself?

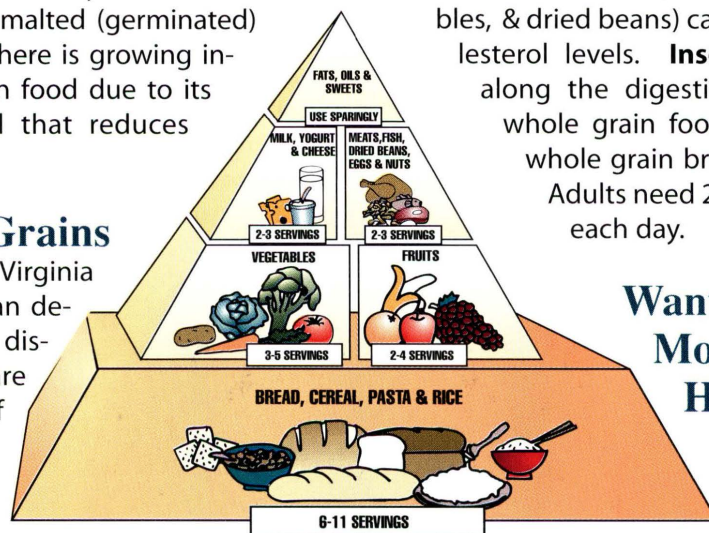
- ▲ Eat a healthy diet by following the basic principles of the Food Guide Pyramid: variety, balance, and moderation.
- ▲ Start at the “Bottom Line” of the Food Guide Pyramid and eat 6-11 servings from the bread, cereal, grain (wheat, barley, rice, etc.), and pasta group. Whole grains are more nutritious than refined grains.
- ▲ Choose foods that are low in fat, saturated (animal) fat, and cholesterol: crackers, low-fat biscuits, cookies,

muffins, cereals, or angel food cake. Read the nutrition label.

- ▲ Modify how you eat and what you cook by using less fat, sugar, and salt, and adding more fiber (whole grains). For example, to increase fiber, pearled barley can be substituted for white rice in most recipes.
- ▲ Select enriched or whole grain foods. Cereal grains are often the cheapest source of food energy. They are excellent sources of vitamins, minerals, and phytochemicals (phytates, lignans, protease inhibitors, glucarates, and caffeic acid).

What is Fiber?

Fiber acts like a sponge. It soaks up moisture to aid in the digestion of food. Research shows that foods with **soluble fiber** (barley, oatmeal, fruits, vegetables, & dried beans) can help to lower blood cholesterol levels. **Insoluble fiber** moves food along the digestive tract and is found in whole grain foods, such as barley, wheat, whole grain breads, cereals, and crackers. Adults need 20-35 grams of dietary fiber each day.



The Food Guide Pyramid

Want to Learn More About Healthy Eating?

Virginia Cooperative Extension has publications, programs, and learn-at-home newsletter series to give you the

knowledge and skills for better and healthier eating habits. Contact your local Family and Consumer Sciences Agent for these educational materials and specific programs being offered in your area.

Selected Virginia Cooperative Extension Publications and Newsletter Series

<http://www.ext.vt.edu>

- Choosing Foods for Good Health (348-710)
- Use the New Food Label to Shop Smart (348-076)
- Heart Healthy Eating—Cholesterol, Fat, & Sodium (348-898)
- Know Your Cholesterol Number (348-018)
- Use the New Food Label on Fat & Cholesterol (348-077)
- Are You Fiber Friendly (348-050)
- The Diet and Cancer Connection (348-141)
- Iron Checklist (348-371)
- Making Ends Meet: Food & Money (348-051)
- C/O Your Health (Newsletter Series to decrease the risk of cancer)
- Change of Heart (Newsletter Series to decrease the risk of heart disease)

Figure 1

1997 Barley Production

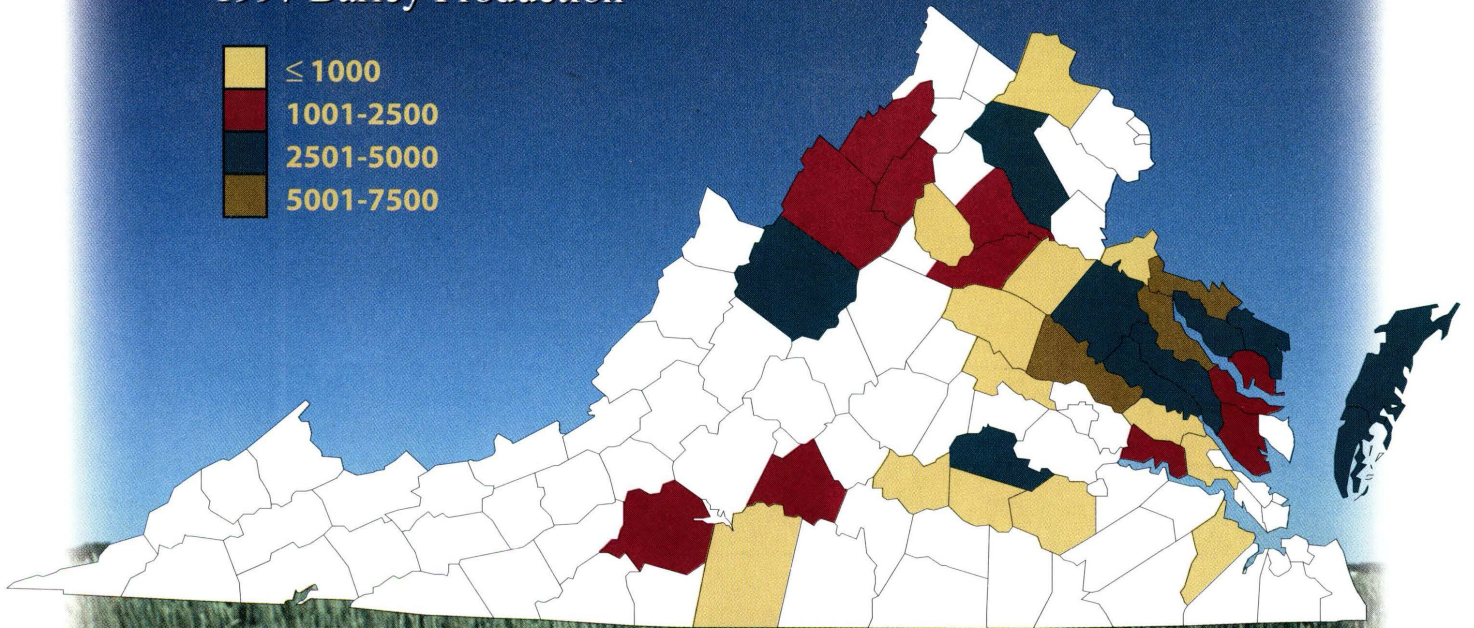


Figure 2

1997 Wheat Production

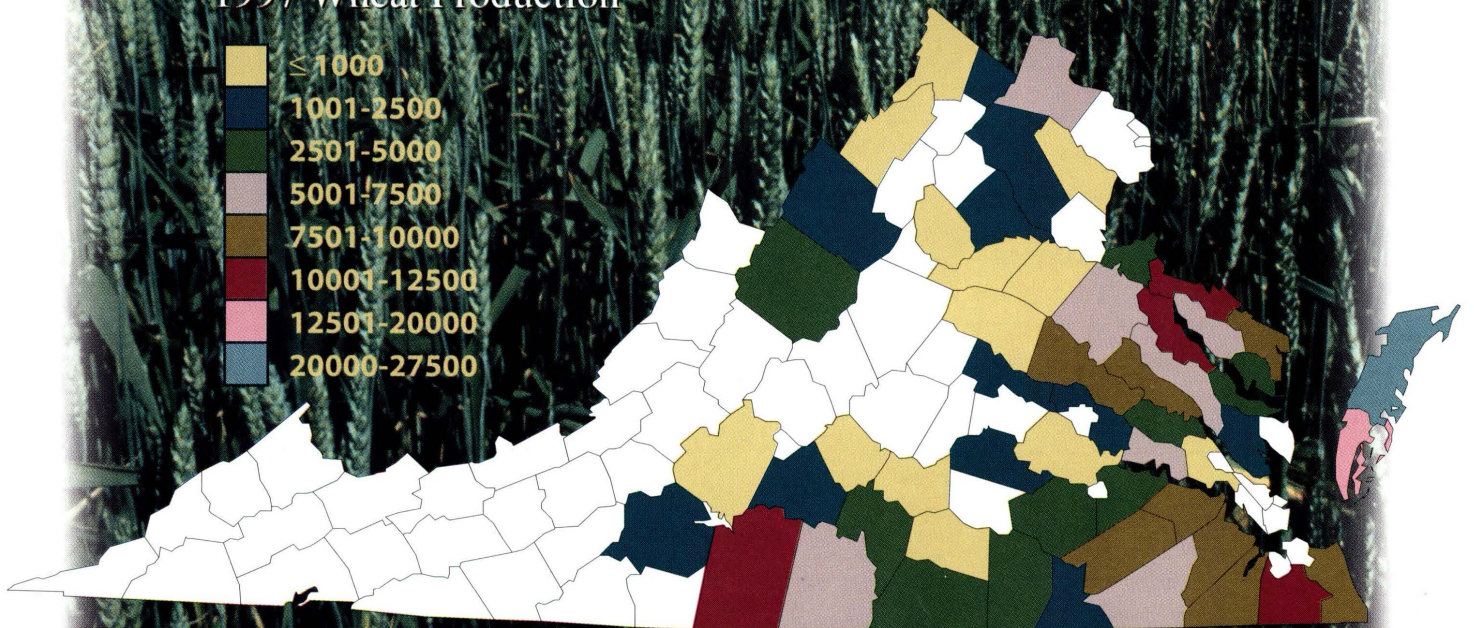


Figure 3

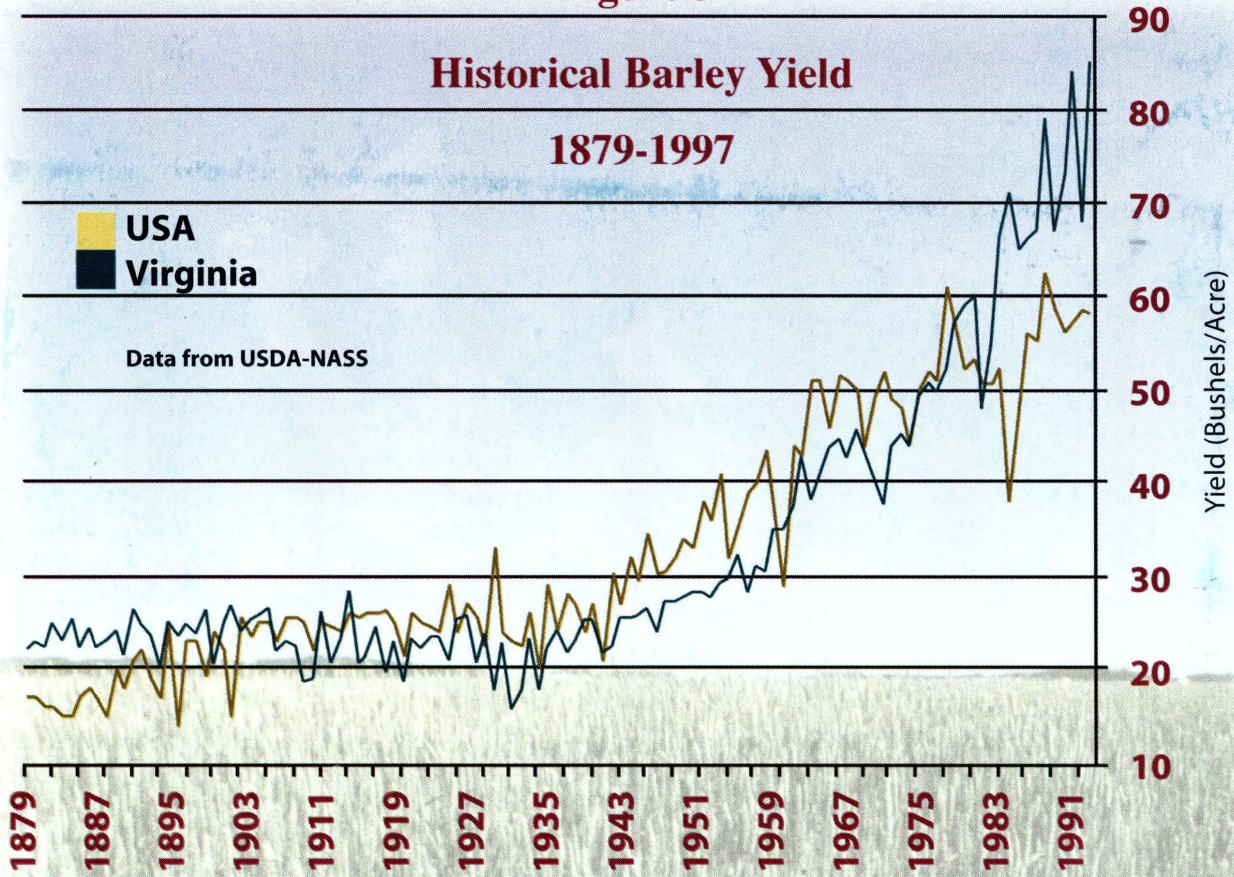


Figure 4

