

It could be a real far-out menu in 2020

WASHINGTON, D.C. — Scientists are developing new foods that would look strange on today's supermarket shelves, but their discoveries won't change your diet much any time soon.

This research focuses on the day nutrients might be scarce.

It's not that the food and nutrition scientists of the U.S. Department of Agriculture's Agricultural Research Service are predicting a nutritional doomsday around the corner. Rather, they expect food supplies to sustain most of American's eating habits for decades to come.

At the same time, the USDA considers it prudent to be ready for any disaster that might cripple the food chain in the future. In case this happens, the scientists are looking for new uses of existing plants as well as little-known crops that could help fill food bins.

From ancient plants

Some foods that are not well known could come from certain ancient plants that once were popular and then were largely abandoned long ago. A few of these are believed to have considerable potential, particularly in countries where more nutrients are sought in the face of severely limited resources.

Putting new foods research off until an emergency arises would be sheer folly, say the scientists. Now is the time to do the work because it usually takes years to develop new concepts to the point of practical use.

Scientists say new foods already are emerging from the research. As examples, USDA researchers have learned that beef tallow,

cottonseed, animal hides, clover and blades of grass can be added to the human diet in new nutritional forms you may not recognize.

Eating such food items seems strange only because our farmers produce an abundance of food staples, making it unnecessary for us to fully utilize many sources of nutrients. This also makes it easy to forget that unhappy events in the years ahead could change our world in basic ways.

"By the year 2020, it is predicted that the world population will double to 8 billion people," said Terry B. Kinney, Jr., administrator of the USDA research agency. He says the USDA foods research is insurance against a long list of potential food losses people face even if the population climbs at a much slower pace than expected.

Avoiding disaster

Among troubles that could trigger a desperate hunt for new nutrition sources, said Kinney, are the possible failure of yields to rise; a scarcity of rich farmland caused by erosion, construction or other factors; a drastic drop in food production as a result of bad weather; devastation of a staple crop by insect pests or disease; or other disasters we have not thought about.

For varying reasons, millions of human beings on some parts of the globe already are glad to get nutrients in nearly any form.

Even in America, some nutritional foods eaten overseas — such as tofu and miso — are gaining popularity. Still more new food sources are emerging as

USDA scientists continue the search.

A few specifics:

— Edible beef tallow is a substitute for cocoa butter.

— Cottonseed and citrus juice create a protein-enriched beverage.

— Okra becomes a margarine and a coffee-like drink.

— Tobacco and animal hides provide protein.

— Better processing and storage resulting from research are improving the quality and safety of many foods.

Exploded blueberries

One development, explosion puffing, preserves blueberries and other fruits and vegetables so they can be restored to almost their original freshness and kept longer on the shelf without spoiling.

Another new technology determines the amount of fat in meat accurately and quickly.

USDA basic researchers also are pursuing promising techniques to increase efficiencies of raising crops — how plants grow, resist disease and overcome drought and other stresses.

Improved photosynthesis is one target.

With the best current farm

operations, plants use less than one percent of the 12 percent of the sun's energy available to them. Improving this efficiency, scientists estimate, could boost productivity 45 percent.

Another end product of the research is better control of plant diseases. Research is showing that the tissue culture technique — reproducing plant cells in test tubes — is producing 30 virus-free strawberry plants, compared to one plant grown conventionally.

Genetic engineering

Genetic engineering is giving scientists new hope that they can open the door to plants that put the sun's energy to increased use, withstand diseases and shrug off dry spells.

USDA plant genetic research also could lead to higher levels of leaf protein in plants like amaranth, an ancient plant holding new food-use promise.

Amaranth was grown as a crop 8,000 years ago. In modern times, it may make a comeback as a hot

weather vegetable and as a grain crop. A staple of Mayan and Aztec Indians in the distant past, amaranth grain is a protein factory that provides a better balance of amino acids than corn, wheat or rice.

Leaves of amaranth taste like spinach. The plant thrives in mid-summer, possible producing up to three crops a season. Its genetic diversity holds potential for plant breeding improvements.

Another plant gaining new attention is egusi, a little known Nigerian seed that could prove to be a super protein source. Scientists believe it can help solve the protein shortage in developing nations.

Seed from the egusi, an inedible melon-type fruit, contains an impressive 60 percent protein when the fat content is removed. Egusi seed flour, similar to whole wheat, also is high in calcium and niacin which could contribute

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Del. ag students

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Haifa, Israel, entomology/plant pathology; Laura R. Brockell, Newark, general agriculture; and Ruth S. Gregory, plant science.

Other seniors recognized for outstanding scholarship were: Elizabeth P. Carlson; Mary M. Cirelli, Annapolis Md.; Kevin C. Doherty; Carol M. Funk,

Darlington, Md.; Jenifer L. Garber; Sara A. Mease; Jeanne E. O'Donnell; Michael A. Pratta; Susan E. Quigley, Chadds Ford, Pa.; Kay Robinson-Beers, Newark; Cecilia Rowe; Dwayne A. Schoeneberger; Terry L. Struve, Wilmington; John M. Ward; Sharon K. Weaver; and Cynthia L. Woolston, Princeton, N.J.

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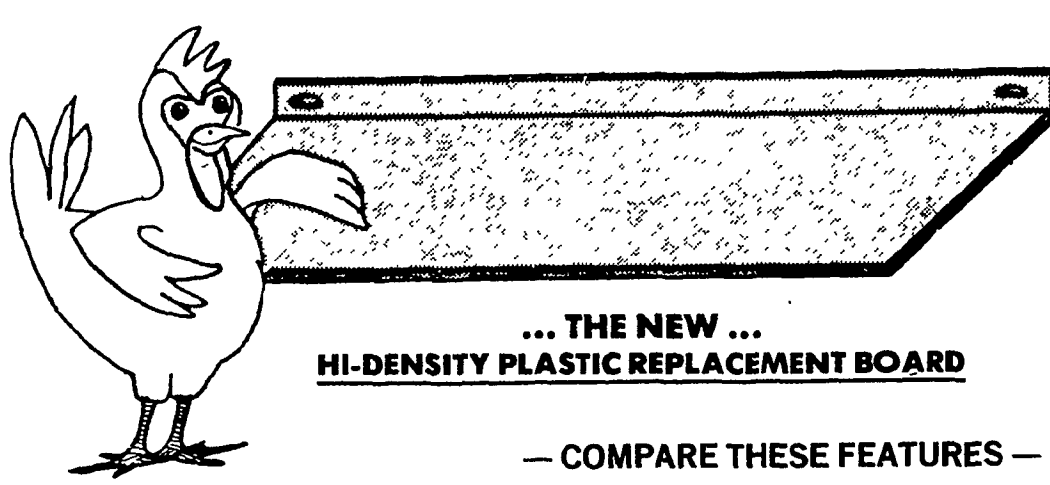
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