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What We Learned About Nutrition From the War

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IT TOOK A WAR to teach us how to eat—a war in which food was as vital as bombs for victory. In feeding our families today we should not forget what we learned then.

We produced that food. We’d been producing food as far as time can trace. But we learned how to produce more food and better food for war, and much of what we learned will help us in the future.

We conserved the food we produced. We cut down waste. We cleaned our plates and kept our garbage pails empty. More than that, we became concerned about keeping nutrients of food—the vitamins, minerals, protein, calories, many of which escape by ways other than the garbage pail.

We found new foods and new uses for old foods. These helped bring our boys home alive from the fighting front, helped keep our war plant production line rolling at top speed, nursed the starving back to health. The food that we produced, that we conserved, found a new place in wartime that is equally effective for saving lives in peacetime.

Wartime food production and food conservation practices were perhaps merely an awakening to nutrition knowledge. But it was the war needs that put this knowledge to use. The producer, the homemaker, the public accepted it.

By ERCEL S. EPPRIGHT
as told to VIRGINIA HARDING

These Iowa State College students are preparing formulas for babies. The girls from left to right are Virginia Smith, West Liberty; Jean McNamara, Streator, Ill.; and Gene McCarty, Brookings, S. D. They are all seniors in home economics.

Increased production was the demand. We met our production goals. And with application of scientific research we produced superior products—a better grain of wheat, butter richer in vitamin A, a more nutritious flour, more vitamin D in milk.

Here in Iowa, farmers took the food-production lead—the first step in a better nutrition program for the world.

Producers in Iowa as in all states became quality conscious. In fact, in the future they may be measuring their fields of wheat, corn and oats in calories, protein, minerals and vitamins to the acre as well as in bushels and tons.

With the proud production of a more nutritious food, it was logical that saving nutrients should be the primary concern in the conservation program. It was. Save the food, yes, but save the vitamins, the minerals, the protein and calories as well.
Learned How to Save

Homemakers everywhere learned to serve food to their families a better way — no overcooking, fewer nutrients down the drain, less boiling the vitamins away. Most of this wasn’t new. But it took the need for food during the war to bring about mass acceptance and practice of these principles.

Modern concepts of food conservation were developed. Air power, a mighty weapon on the fighting front, played an important role in saving food nutrients, and its use will continue. The sooner a vegetable or fruit appears on the table after it’s picked, the richer it will be in vitamins. That’s where air travel will step in. A tomato picked in California at sundown can be in New York the next day in time for dinner.

The enrichment of flour was speeded up by our war food conservation efforts and the urge for better nutrition. Thiamin, niacin and iron, which were taken from the wheat in milling, and more riboflavin were put back in after the flour was milled. Improvements in the nutritive value of cornmeal and rice followed suit in some sections of the country.

Conservation through preservation is not new. Nor were the methods of preservation—freezing, drying, canning. But again, the war focused attention on saving nutrients as well as saving food. We learned the importance of canning foods under carefully controlled conditions; of saving vitamins by speeding vegetables from garden to freezer.

Drying, or dehydration, played a large part in food preservation efforts. Dehydrated foods not only improved diets everywhere, but they conserved shipping space. Also in sending food across the seas, we learned how to keep our butter and cream from turning rancid. In the future, the same may apply to eggs—keeping them fresh through scientific control.

In group feeding, we learned that conserving nutrients was much more of a problem than in the home. For instance, in large-scale salad preparation, much vitamin C was lost in chopping fruits and vegetables with the steel knives of chopping machines. Foods standing for a long time on the steam table also become poorer in nutritive value.

Too, many foods were practically “vitaminless” after holding an hour or so before serving. Improvements that the army and navy adopted to conserve nutrients in mess feeding should benefit all persons dependent upon restaurants for their meals. At home or in the mess hall, losses in vitamins occur when foods are cut and exposed to the air, especially if they are not kept cold.

New Values Found

Perhaps more interesting than the war’s influence upon food production and conservation has been its influence on food uses. Again, the picture focused on the nutrients of the food rather than the food itself.

We found certain nutrients would increase the possibility of survival of our boys on life rafts, help our wounded heal faster, help our men battle the elements, protect our people from disease, play a decided part in rehabilitating semi-starved soldiers, prisoners and our allied peoples.

In increasing the manpower, nutritionists worked at the problem from every angle. They worked for a healthier newborn, for healthier older people. They worked to keep the able-bodied group working at maximum speed and efficiency.

To make sure there would always be a healthy America, the newborn, of course, had to be protected. And one of the best ways nutritionists found to do that was by feeding the mother better before the baby was born. Evidence from nutritional observations proved that if the mother’s diet during pregnancy was good or excellent, her infant would, in all probability, be good or excellent. If the diet, on the other hand, is poor to very poor, she usually will have an infant whose physical condition is poor. A good diet may be simple and inexpensive. It includes much milk, eggs, green and yellow vegetables, citrus fruit or tomatoes, liberal amounts of meat and whole grain cereals.

Of 216 cases studied by the Harvard School of Public Health, all still-born infants, all infants (except one) who died within a few days after birth, most infants with marked defects at birth, all premature infants and all infants immature in actions were born to mothers whose diets during pregnancy were unquestionably inadequate.

For the elderly group, nutritionists are looking ahead. Through application of the present knowledge of nutrition, active years of life may be extended. Instead of having to retire from active work at the age of say 60, with proper eating habits older people should be active for perhaps 5 to 10 more years. Too often milk is regarded
as a child’s food. Oldsters need it too—at least 1 pint or more a day according to studies at Iowa State College.

Food to Fit Needs

Proper food is needed for the man who is working at top speed to maintain his health and efficiency. “Though nutritionists’ experiments differ, it’s been generally accepted that when hard working men are not getting enough of the vitamin B complex, they lose their willingness to work and then their ability to work. Definitely when underfed they become irritable and hard to manage.

Proper nutrition will aid in healing wounds. For this we need many nutrients but especially protein and vitamin C. With loss of protein through bleeding, much more protein was needed in the diets to replenish the supply. Practical places to get the protein are in meat, milk and eggs, and the vitamin C in citrus fruits, tomatoes and raw cabbage.

For those who donated their blood during the war, good nutrition was the best medicine to bring their blood back to normal. Foods with plenty of protein, iron, copper and vitamins of the B complex were added to their diets to speed up blood regeneration. Here again this adds up to an all around good diet consisting of milk, eggs, meat, green and yellow vegetables, citrus fruits and whole grain cereals, plus fats and sweets to meet the needs.

Food to Fight Sickness

Though we knew before the war that nutrition was an important factor in disease prevention, war increased our knowledge of the subject. Here again protein in the diet was found especially important. It helps the body produce antibodies—a blood substance which fights invading germs.

We called upon nutritive tactics to help our men battle the elements. In tropical climate, additional salt as well as water was needed in the diet, but that seemed to be all. Vitamin needs in the tropics were about the same as in temperate climates.

War research showed that “altitude sickness” was another con-
querable ill of man. Proper nutrition again offered some assistance. A preflight or inflight diet high in carbohydrate, for instance, can protect man against some of the ill effects accompanying lack of oxygen, while, on the other hand, protein foods offer no protection at all.

Gas-forming foods prior to the flight must be avoided. Application of the scientific knowledge regarding food and altitude tolerance is thought to have been an important factor in decreasing flying accidents previously attributed to “causes unknown.”

With our own half-starved soldiers liberated from prison camps, we learned the big part proper nutrition plays in rehabilitation. And the lessons learned are playing a part in the rehabilitation of hungry European and Asiatic countries.

Good food—not vitamin concentrates—is the most important need for treating folks near starvation. But it must be good food used wisely. For instance, starved individuals were found sensitive to fat. They responded to it with violent stomach disturbances when it was fed even in moderate amounts. Great advances have also been made in feeding “through the veins.”

By this means, many a weakened soldier or victim of starvation has been given new life and strength to fight his way back to health.

These are some of the things we learned in nutrition during the war. We uncovered new paths for nutrition research. We retrod old paths but thousands more people became interested and followed. We became nutrition conscious in production, in conservation, in use. We pointed a way for nutrition’s future in a healthier tomorrow.

Soybean Hail Damage

How much are soybeans hurt by hail at different stages of growth?

An answer to that question is sought in a research study under way at the Iowa Station. Three degrees of injury are used—light, medium and heavy. Since one cannot very well “arrange to have it hail” when and as much as needed to test the injury, the soybean plants are beaten with various weapons to produce injuries like those caused by hail.

The injuries at these three degrees of damage are made at various periods of growth and development. The experiment so far indicates that any damage done when the plants are beginning to form pods is much more serious in cutting yields than damage at earlier dates.

After pods are formed and along toward maturity, the damage is mostly mechanical. It is then simply a matter of how many of the pods are knocked off the plants.

Damage in the early growth of the crop has slowed maturity, which increases the risk of damage from frost in the fall. There is also a problem of holding down weeds when the crop is damaged at early stages. If weeds are allowed to come in badly, yield can be hurt more.

Two varieties, Lincoln and Richard, have been used in the studies. The results in the last 3 years have been much the same. Heavy damage in the pod-forming stage cut the yield to less than a third of that obtained from undamaged beans. Even light damage at this stage of growth cut the yield to about 60 percent of plots beside it which were not damaged.

Dust Soybean Seed?

There has been no increase in yield from dusting soybean seed with one of the mercury seed dusts in experiments at the Iowa Station. In fact, the yield has usually been lower when the seed has been treated.

One of the reasons for lowered yield is that the dust kills the bac-