The Consumers' Corner

By Mary K. Simmons

From Cattle Range to Kitchen Range

It takes at least two years of planning by ranchers, farmers, feeders, packers and countless others before beef arrives at your market. This team work is paying off with more beef coming to market to tempt you to buy and serve beef oftener.

Before buying beef, consider grade or quality and the wholesomeness of meat. Official grades include U. S. Prime, Choice, Good, Standard and Utility. Cutter and canner cattle are rarely offered to customers as fresh beef, but are used in manufacture of sausage, meat loaves and processed meat items. Not all stores carry all grades. Beef of any of the above grades will be satisfactory if properly prepared.

For complete information on grades of beef, UA Extension Service's bulletin *Beef in the Family Menu,* Circular 259, can be obtained from your Extenson office in your county. Federal grading merely indicates tenderness and palatability of the meat — not the health of the animal.

Only meat shipped interstate is required to be federally inspected for wholesomeness . "U. S. Insp'd and P'S'D" stamped on meat means inspected for wholesomeness — that meat came from a healthy animal and that it was processed under sanitary conditions.

Two Counties Have Graders

Only two counties in Arizona — Maricopa and Pima — employ full time meat inspectors for wholesomeness of meat consumed *within* the state.

Most consumers pick out firm lean beef, well-marbled with fat, but these are not the only keys to quality. Other factors are age of animal, how it was fed and how long the meat was aged. These do not show up at the store.

Some homemakers rely on color — but color changes due to exposure to air and light and has little to do with quality and tenderness. Many sources build their reputation on the meat they sell, for they want satisfied consumers.

Texture or grain of meat strongly affects tenderness, especially in fresh beef cuts. The assumption involved is: The finer the texture, the more tender the meat; or conversely, the coarser the texture, the less tender the meat. Such things as nutrition, diet, convenience, menu variety and suitability for entertaining also influence today's consumer when she buys meat.

It's Built on Trust

What quality factors do consumers consider? One study reported that 47.5 per cent of the women questioned felt that the indications of a quality meat stem from a store's reputation, 34 per cent rely on the grade identification of the meat, and 22.4 per cent trust the names of the meat packers.

How is price determined? Price depends primarily upon supply and demand. However, the cut with the lowest price per pound is not always your best buy. Generally rib roasts cost less per pound because they contain rib bones and all other choices are boned and trimmed or rolled.

When you find an attractive meat "special" on a beef roast, buy two — one to cook, one to freeze. For best flavor and tenderness buy a roast with at least three ribs. This will serve four persons with enough left for another meal. In buying a boneless roast, figure four servings per pound.

If You Buy in Quantity

Buying beef in large quantities can save you money, but before you buy consider:

1. Time it would take your family to eat a half or a quarter of beef (Frozen beef should not be kept longer than 9 to 12 months).

2. 20% of beef side is lost in trimming out bones and excess fat. About 51% of the weight of beef is in the forequarter. This includes rib roast 8%; chuck roasts 19%; ground beef 10%; stewing beef and miscellaneous cuts 4% and 10% cutting loss. In the hindquarter, T-Bone and porterhouse comprise 6%, round steaks 10%, rump roasts 6%, sirloin steak 8%, ground beef 9%, and cutting loss 10%.

The weight of a piece of beef is not only a good guide for buying enough for a meal but it is important in cooking. With a large cut such as a roast, weight determines how long it should be cooked. With steaks, thickness rather than weight is your guide to cooking time.

Once the meat is purchased, rush it home. Keep these points in mind— (1) Leave meat in wrapper if you plan to use it that day, otherwise slit package so air can get to the meat. (2) Put meat in coldest part of your refrigerator — leaving it loosely covered, allowing cold air to circulate around it. (3) Keep cured meats in original wrappers and keep no longer than two weeks. (4) If you buy more meat than you can use in two or three days, re-wrap in freezer paper or foil and freeze quickly. (5) Cooked meat should be cooled quickly. When cold, wrap loosely or put in covered container and refrigerate.

At Low Temperatures

For maximum tenderness and juciness, cook beef and veal at low to moderate temperatures. There are smaller losses through evaporation, shrinkage and dripping and you'll have more meat to serve.

Big changes are happening in the production and marketing of processed meats — and they are beginning with the animal. In November the Iowa Beef Packers of Denison, Iowa, opened a new plant that features an assembly line for beef cattle. A carcass is put on a moving assembly line, the hide is taken off and the entrails and carcass are dropped on separate conveyor belts, with every part being claimed by different workers.

Other companies have developed machinery to speed up production of various meat products. One machine can grind out 30,000 hot dogs per hour, all of uniform length and weight. Another, guided by computer punch cards, can chop up huge chunks of meat to supply 1,000 pounds of meat paste every four minutes.

What Future Holds

What does automation offer the meat industry of the future? Dr. Augustus B. Kinzel, president of the National Academy of Engineering, suggests that in some future time a laser beam will be used instead of a knife to cut meat with tissue-thin precision; that superhot temperatures may be employed to create new meat textures; and that chemicals might possibly be used to introduce new colors and smells.

The future sounds exciting, but back to the present.

Although the seconds spent deciding which meat to buy are important, consumers need to remember that

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This article is one of a series by the Home Economist in the Gila County Cooperative Agricultural Extension office.

ENVIROTRON

New Word for a New Scientific Tool

Wallace H. Fuller

Editor's Note: Dr. Fuller, head of the Department of Agricultural Chemistry and Soils, here coins a new word, "Envirotron," defined as a habitat where all factors of a biological environment are controlled as precisely as possible. He uses the word here to describe a plant habitat only, since this is the present area of research.

Research itself could be very simply defined as "finding things out," and in the laboratory, experimental field, barn or corral, this is done by trying to isolate or evaluate alike and unalike factors or characteristics.

To find the result of fertilizer you you must compare fertilized plants with exactly similar plants which have not had that fertilizer. But error creeps in as one realizes that each plot has slightly different soil conditions, slight errors and variations in handling, even differences in air currents which affect plant growth.

Thus the seeking for a habitat where all conditions can be controlled, the ultimate goal of complete absence of accidental differences. Dr. Fuller's new word and the device he describes can be of great use and value to scientists in many fields.

The concept of the envirotron originated from a need for more precise knowledge of: (a) the extent that each component in the natural environment of plants can influence plant growth and economic productivity, (b) the interactions of one environmental factor on the others in relation to plant growth and productivity, (c) interrelations between root and top environments, (d) interaction between microorganisms and plant nutrient availability and transformations, (e) the movement of water, salts and air in soils as influenced by varying the components of natural habitats.

These objectives can be accomplished only by a system capable of controlling precisely the components found under natural environments such as: (a) temperature, (b) light, (c) oxygen, (d) carbon dioxide, (e) humidity, (f) root environment, (g) water, (h) physical damage, and (i) disease.

Integrated With the Normal

Our concept of the envirotron must be integrated with the development of a desert community which is self-supporting in power, water and food. Around this overall objective, individual projects will be oriented.

A few research problems which urgently need our attention are discussed, more to prompt creative thought than to offer quick or ready solution.

General Basic Problems

I. *More precise evaluation of the threshold parameters of the individual environmental components on plant growth and economic production.*

For example, it is not easy to measure the effect of temperature; i.e., intensity and duration, on the persistence of various plant species under field or even greenhouse conditions. Too many variables cannot be controlled. This applies to forage or grass on the range as well as cotton on irrigated fields. Moreover, interactions between two variables are not possible to evaluate precisely unless some means is provided for control of all other components indigenous to natural field environments. The "Envirotron" will permit such control and opportunity for precise evaluations.

II. *Plant potential productivity* — This refers to the absolute, fullest capacity of a given genetic plant species to grow and produce, whether it be for food, fiber, lumber or any other economic commodity.

Some of the questions that need answering are: What is the maximum potentiality of a specific genetic species to produce? Can an answer be obtained? If so, what limits the attainment of this maximum under present management or farming practices? How can present farming practices be improved to better realize this potential productivity?

III. *Soil potentiality* for maximum plant growth and plant productivity. It is well known that all soils do not produce crops equally well, even under identical climatic environments. Even when supplied with all the available plant nutrients believed to be deficient in the soil in question, soils do not produce equally well. Why? If the plant nutrients are adequate and moisture and temperature identical, then one could logically suspect the limiting components to be the physical make-up of the soils.

Yet there remain certain microbiological factors also unknown to us. Perhaps organic growth regulators differ in quantity and quality in different soils which make plants respond differently. Whatever the differences are, it is high time soil scientists begin to uncover basic knowledge that will help bring soils up as close to their maximum potential plant productivity as is genetically possible.

The Envirotron again is conceived to aid in discovering why soils have not been brought up to the same high level of productivity by present technical manipulations under field conditions.

Specific Problems

The first three items discussed concern general basic problems that have confronted scientists for as long as history itself. To get to the solution of these basic problems, specific components involved in the environment of plants must be studied in extreme detail under as controlled conditions as possible.

The Envirotron will be designed to study specific variables while holding all others constant. Some examples of specific problems that will receive attention are enumerated. No doubt others will receive attention as the Envirotron program gains momentum and as individual ingenuity and creativeness develops.

I. *Evaluation of soil organic matter.* There is certain evidence that organic matter has value for plant growth and productivity that exceeds its value based on plant nutrient content. Manures, composts, etc., fall into this category also. It is hoped that the Envirotron will assist in the evaluation of such materials. This evaluation is particularly important in arid and semiarid soils, where the

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the best guides to eating quality in meat are:

—Shop at a reputable supermarket
—Apply the right methods of storage and cooking
—Relate the best cooking method to the cut
—And, in general, make intelligent use of the available consumer service information published by magazines, meat companies, U.S.D.A. publication #118, and Arizona Extension Circular #259.