

Food Testing Lags Behind

There is little chance that federal standards of food purity will match the stringency of those by which drugs are regulated in the foreseeable future, if they are able to at all.

The Food and Drug Administration is responsible for both. But in both areas, it is dependent on the sophistication of the sciences—drug chemistry and food chemistry.

Food additives and pesticides are not now adequately tested for safety in humans before they are marketed, Dr. James L. Goddard told a meeting of the Food Protection Committee of the National Academy of Sciences. Goddard, FDA Commissioner, didn't blame anyone. He blamed the fact that "We do not have the kind of clinical research underlying food chemistry that we have underlying drug chemistry." And animal studies, on which the food chemists must rely, just won't reveal the same depth of detail about effects on humans as do the clinical tests to which all new drugs are subjected.

Broadscale testing on humans is not in the cards, Goddard indicated. Regulators will just have to wait until animal

testing, or some other technique, reaches an adequate level of sophistication.

Man, Goddard said, is more than just a collection of bigger monkey, dog, rat and swine organs. Although the action of a chemical on animals is an indication of how it may behave in man, it is not a guarantee. And because FDA does not require that studies on food additives and pesticide residues be carried to the clinical stage, it necessarily makes decisions regarding safety on the basis of partial information.

"As far as food chemicals are concerned, I believe we will have to expand our basic research with animals at the subcellular level and then make our predictions. We are some years away, I must say with regret, before this kind of research will effectively fill the gap of clinical data that now exists," he told the scientists.

In the meantime, FDA will act on complaints and reported injuries by withdrawing a food additive or lowering pesticide tolerance levels to zero if necessary. And if an error is made, it will be on the side of caution, not risk, Dr. Goddard reported.

ELECTRONICS

Cathode Ray Alternative

The National Research Development Corporation is to support work at the University of Sussex which holds out the possibility of developing a compact alternative to the cathode-ray tube.

The proposed device—which has been termed "a magnetic visual display panel"—has been suggested by Dr. A. W. Simpson of the Applied Sciences Laboratory at the university.

There is at present no hardware to support the views put forward by Dr. Simpson and it may be something like two years before any firm conclusions can be drawn.

The display panel is made of a matrix of transparent magnetic elements, each having two distinct magnetic states, one of which is opaque to polarized light.

By shining polarized light on the matrix the magnetization of the matrix would determine the display.

The device would depend upon the Faraday effect, that is the effect of rotation of the plane of polarization of incident radiation in a direction depending on the magnetization of a material having two states of magnetic remanence.

The path for the light would be arranged so that there would be a rotation of 45 degrees, and switching of the magnetic state would then rotate the plane of polarization by 90 degrees.

Elements, possibly formed from yttrium iron garnet, gadolinium iron garnet or a mixture of the two, might be arranged in a pattern similar to that for magnetic core stores.

The absence of an electron gun of conventional type used in cathode-ray tubes would make it possible to overcome many problems associated with tubes, although NRDC suggests that it is too early to say whether sufficient resolution could be achieved to make such displays suitable for TV displays.

With the elements arranged in a matrix of rows and columns, and a current conductor provided for each column and row of elements, currents applied to the row and column conductors would be insufficient to reverse the magnetization of any element alone but could switch the element in which currents flow coincidentally. This would allow a given element to be selected and switched.

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