

July 9, 1949

Mr. K. L. Milstead,
Chief Cincinnati District,
Food and Drug Administration,
501 Post Office Building,
Cincinnati 2, Ohio.

Dear Mr. Milstead:

I regret my tardiness in replying to your letter of May 26 concerning the problem of spray residues, but a number of matters have interfered seriously with my correspondence, and I shall have to rely upon your indulgence.

We, of course, have reason to be very much concerned with the hygienic problem of spray residues of various kinds on fruits and other food materials. We have studied various aspects of this problem, sometimes more or less indirectly, in connection with our principal work which relates to industrial hazards rather than to hazards to the general public. Some of our data, therefore, are pertinent, with particular reference to lead, fluorides and DDT. So far as I know, there is no wholly satisfactory information on arsenic, and we have none worth mentioning on parathion. I shall have to admit frankly that at the present time I do not know the facts with reference to the use of these materials on various food products, nor do I know the proportional representation of various food products likely to be sprayed with these materials, so as to be able to appraise their overall significance in the dietary. The latter, to my way of thinking, is the most difficult problem that is faced by any investigator or authority responsible for the public health in these matters. I have been told recently, that the use of lead and arsenic on apples and pears is at the vanishing point in a number of sections of the country. Despite the apparent reliability of my source of information I do not know that this is true, nor do I know how extensive has been the shift country-wide from these to other insecticides. If the facts are as reported, the need for a tolerance on these compounds is very greatly diminished.

The problem of DDT is somewhat confused by the present differences in the statements of investigators with reference to the effects of low concentrations of DDT on experimental animals. I should be disposed to feel that the level of 7 p.p.m., as indicated in your letter, should be well within safe limits, but I think this opinion will be disagreed with in certain governmental circles.

Returning to the subject of lead and fluorine, we have conducted experimental work on human beings that is highly significant. Our observations relate to the fate of these materials in the human body, and they enable us to express an opinion as to the levels of dosage which are compatible with safety and well being when taken day by day over long periods of time. If it were possible to relate tolerances to these physiological data, I would have no hesitation

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in expressing opinions based on sound evidence. The real difficulty resides in the fact that it is very difficult, if not impossible, to determine the precise contribution made to the daily intake of these materials by individual items of food stuff. We do not have field information on the extent of the contamination of various articles of food in various areas of the country. We do not know anything, factually, about the quantitative occurrence of lead, arsenic, or fluorine on apples or pears as they now appear on the market. Nor do we know whether methods of washing now employed remove these materials effectively or to any measurable extent. All that we can say is that the available evidence, so far as we have seen it, is that the representation of these materials in the dietary, as we have seen it, would appear to be within safe limits at present. Specifically, with reference to lead, our evidence would show that the daily dosage in the food must not exceed a figure somewhere between 0.5 and 1.0 mg./day. The fact is that the figure ^{now} approximates 0.3 mg./day in the case of the average individual over a fairly prolonged period. There is no question of risk of life or health, so long as individuals conduct themselves with respect to their diets within this limit of lead intake.

There are many other things that may be said on this subject, and you may be assured that I would be prepared to attend a hearing on this subject, and would, in fact, consider it my duty to do so. I should hope that some conclusion, which could be substantiated by adequate evidence, could be arrived at with respect to these tolerances. I am not as certain as some other persons would seem to be, that the evidence is such that this can be done.

Cordially yours,

Robert A. Kehoe, M. D.

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