Research on carcinogenic food preservatives are a major concern for nutrition scientists. Prof. Newberne of the Dept. of Nutrition studies the effects of nitrates involved with meat processing. (Photo by Gary S. Englonson)

By Gordon Hunter

"I feel we know so many dangerous things in our environment, that I should do what I can to reduce the risks," declared Professor of Nutritional Pathology Paul Newberne of the Department of Nutrition and Food Science, who directed the study linking nitrates to cancer for the US Food and Drug Administration (FDA).

As study director, Newberne designed all of the experiments in the project and had to view all of the thousands of tissue samples for the 2200 rats involved in the study. He also had the ultimate responsibility for the project and had to go to Washington to testify on the findings.

Nitrates are added to processed meats like hot dogs, bacon, canned ham and cold cuts as a preservative to protect against botulism food poisoning. It is also the curing agent which gives the characteristic flavor and red color to cured meats. There is no known substitute for nitrates to protect against botulism.

The move to immediately ban all nitrates that started when the study's findings first became public, was part of what Newberne sees as a 'hysteria in this country concerning cancer.'

He fears this hysteria not only because of the immediate danger of banning possible cancer causers, but also in that the effects of such a ban, but also from the backlash that usually follows the hysteria, in this case, might prevent the discovery of a cure for cancer by withdrawal of research money. He sees this backlash already starting as more people are saying 'the use of studying it, everything causes cancer.'

The main weapon of those who are trying to ban carcinogens is the controversial Delany Amendment. It basically says that any substance that causes cancer in any animal in any dosage must be banned. Newberne pointed out that the phrase in the amendment reading "when used in appropriate tests..." is usually ignored, making it very inflexible. He went on to consider modifying the Delany Amendment in such a way that scientific judgment can be examined over the results of scientific studies, suggested Newberne. He stated that this would be "a matter of changing the legal language..." and would allow for greater flexibility and judgement in any action taken.

He added that was very important to balance the risks and benefits of any action.

Newberne's research with complaints with what was being done about nitrates in Washington. "First, I would not want to see a ban. This would be too dangerous because of the backlash. This is not being done now it is right. It allows time for public debate and serious consideration of the facts. Third, I feel strongly enough about the study's findings that we don't need them for protection against botulism, we should reduce, eliminate or substitute nitrates." He added that government and industry together should be able to find a substitute but that "government shouldn't make the industry do anything."

Newberne's research has shown nitrites to be weak carcinogens, according to Newberne, but rather a 'promoter,' which acts like a catalyst on 'initiators' which directly cause the cancer to start and grow.

Newberne explained how the digestive tract also converts nitrates into nitrite and then into the carcinogenic nitrosamines. Nitrates occur naturally in substantial amounts in leafy vegetables, root vegetables and drinking water. Newberne added that the body chemistry could...