

DENTISTRY

Testing Dentifrices

Carefully controlled tests covering a period of years are needed to get sufficient data to show that dental powders and pastes have anti-caries value.

➤ AT LEAST two or three years of carefully controlled tests on several thousand children are needed to show whether or not a particular toothpaste or powder or mouth wash can check tooth decay. The tests, moreover, should be made by several independent investigators.

This is the opinion of scientists at the National Institute of Dental Health, Public Health Service, and of the American Dental Association.

Both of these groups are unhappy about advertising claims for new dentifrices that lead the public to think the dentifrices will check tooth decay, when the claims are based only on theory and tests on laboratory rats.

At the National Institute of Dental Health, for example, scientists found penicillin very active in reducing caries, or tooth decay, in white rats in the laboratory. Trials were then made on humans. The first two were negative. The third was positive. The fourth was negative. The conclusion is that in clinical trials on children penicillin caused no significant change in the caries picture. Yet the experiments with the laboratory rats looked very promising.

Laboratory experiments with animals are needed, but one question in the past has been whether the decay in rats' teeth is the same as that in humans. Scientists now think they have a diet that will produce in rats a kind of caries much closer to that in humans. With this caries, it may be possible to tell more truly from rat experiments what a dentifrice might do for human caries.

When a new dentifrice is tested, it should cover not only several thousand children for many years but also children of wide age spread. They should be in the six- to 17-year-age group, the period when their teeth are highly susceptible to decay. And the tests must run for years because, while caries may develop very fast, there may be periods of months or years in which the process is dormant and the child has no decay.

If he has been using the new, supposedly caries-checking dentifrice during that period, the lack of decay would be attributed to the new dentifrice although actually it would have occurred anyway.

Some tests of the caries-checking ability of fluoridated drinking water, for example, are being run for ten years, although there is a generations-long history of people drinking naturally fluoridated water showing an anti-caries effect.

Some dental authorities also are worried that the public may be disappointed too often by glowing claims for dentifrices which do not hold up in actual experience. Then, some day if something really effective is discovered, the public may refuse to use it.

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PLANT PATHOLOGY

Beetle Indicted as Spreader of Oak Wilt

➤ A TINY black beetle has been indicted as a "typhoid Mary" for the spread of the deadly tree disease, oak wilt, by two separate "grand juries" of scientists.

Investigations disclosed simultaneously to the U. S. Department of Agriculture by researchers in Iowa and West Virginia show that glistening black, sap-loving beetles of the family *Nitidulidae* can spread the fungus disease from infected to healthy trees.

The disease is spread in an infected area

by passing from root to root underground. But how the fungus could be transmitted from old infection sites to new areas was unknown until the discovery of the nitidulid beetles' ability to spread it.

Dr. Dale M. Norris, Jr., working jointly with the National Oak Wilt Research Committee and the Iowa State Conservation Commission, reported his experiments from Iowa.

F. F. Jewell and Drs. C. K. Dorsey, J. G. Leach and R. P. True of the department of plant pathology, West Virginia University, carried out the West Virginia studies.

Both groups of researchers took nitidulid beetles feeding from infected oaks and transplanted them to wounds made in isolated healthy oaks. Infection of the trees following the "inoculation" with the beetles showed the beetles could spread the fungus to healthy oaks.

Dr. Norris discovered that as few as two nitidulid beetles collected under natural conditions can carry a sufficient load of oak wilt fungus inoculum to infect a tree through a fresh wound in three weeks.

Five healthy trees out of six on which exposed nitidulid beetles had been placed over wounds showed oak wilt symptoms in five weeks, the West Virginia researchers found.

"The production of the disease experimentally . . . seems to justify the conclusion that they (the beetles) are important vectors in nature," the West Virginia group said.

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BABY GAUR—This flop-eared, new-born gaur is being carefully protected by its mother at the National Zoological Park in Washington. The gaur is an East Indian species of wild cattle.