

life sciences

NUTRITION

Poultry flavor may depend on bacteria

Housewives know that two chickens, identical in appearance, may have entirely different flavors, one perhaps being quite chickeny while the other is insipid. Often in bad repute on the insipidity scale are battery-raised chickens, which are raised most often in very clean, controlled conditions.

It looks as if their poor culinary reputation may stem from their cleanliness. Miss N. F. Dalton, Mrs. Dorothy Strong and M. L. Sunde, food scientists at the University of Wisconsin in Madison, report that poultry raised without intestinal bacteria taste less chickeny than those raised in the barnyard.

Working on the theory that intestinal bacteria may synthesize flavor elements just as some are known to synthesize vitamins for their host's use, the researchers raised three groups of chickens from eggs. One group was germ-free; one group was exposed to only three intestinal bacterial species (*Clostridium perfringens*, *Escherichia coli* and *Streptococcus faecalis*), the third group was reared under barnyard conditions.

Taste testing showed considerable flavor difference between the first and the third group. The second group tasted no different from the germ-free group, indicating that the chicken-flavored bacterium is not one of the three tested.

VIROLOGY

Immunofluorescent test for colds

Space officials had some anxious moments after the three Apollo 7 astronauts came down with colds. It was feared, among other things, that the men would have severe sinus trouble during re-entry. Though such trouble didn't materialize, precautions are being taken so that in future astronauts don't carry unsuspected infections into space.

Dr. Elliot C. Dick, a virologist at the University of Wisconsin in Madison who specializes in common-cold-causing viruses, is developing an early test for virus infections under a grant from the National Aeronautics and Space Administration. He says that once perfected the test will enable physicians to tell within 24 hours whether someone is carrying a virus. Present tests take a week or more.

Dr. Dick's test involves mixing a fluorescent antibody with a tissue culture taken from the patient. If the virus for which the antibody is specific is present, then virus and antibody react. The reaction produces fluorescence when viewed under ultraviolet light.

Holding up the program is the fact that there are more than 100 viruses believed to cause the common cold, and Dr. Dick must develop a fluorescent antibody for each of them.

BIRTH CONTROL

Intrauterine devices cause germ rejection

There has been some concern in the Food and Drug Administration that in many cases sterile procedures for packaging, handling and inserting intrauterine birth con-

trol devices are not adequate (SN: 2/3, p. 112).

Now research on reproduction being carried out in sheep at the U.S. Department of Agriculture's Beltsville, Md., experiment station indicates that the IUD may in part make up for any lack of sterility by stimulating strong antibacterial action by the uterus.

Dr. Harold W. Hawk says the IUD is similar to any foreign object imbedded in an internal organ. The uterus tries to destroy it chemically or throw it out physically. While the loop usually resists physical expulsion and is impervious to uterine biochemical weapons, any bacteria present are attacked. Dr. Hawk reports that of an estimated 3.14 billion bacteria intentionally implanted with each IUD in a series of sheep, only two million on the average survived for four hours. In uteri without the IUD more than 670 million bacteria survived this long.

At the same time white blood cell counts in the implanted uteri were 50 times greater than in control sheep at the four-hour point. Dr. Hawk says the greatly heightened aggressiveness of the implanted uterus may explain some of its contraceptive action; spermicidal action was three times greater in these organs.

POLLUTION

Spill prevention plan

Many localities have created codes governing how much of what kind of waste material can be dumped into waterways. These codes control pollution levels on a day-to-day basis. Often, however, an accident or mistake at some point in an industrial process results in a spill of pollutants that can poison the river.

The Sanitary Water Board of the Pennsylvania Department of Health is now requiring its more than 3,000 waste discharge permit holders to submit for approval plans for avoiding accidental spills at their plants. The plans submitted will have to consider accidents that might happen during material transport, storage and disposal, power failure, equipment breakdown and similar incidents.

Those companies required to submit plans first will be those involved in past fish kills and other spill incidents. More than 130 pollution fish kills have been reported in Pennsylvania in the past three years. The board says that more than a quarter of these might have been prevented had spill control plans existed.

ORNITHOLOGY

Sand grouse is flying sponge

Just before the turn of the century a few aviarists reported unusual behavior in a group of desert birds called sand grouse. The males were alleged to deliver water to their young by soaking their breast feathers full of water, flying home, then letting the nestlings drink the water from the sopping plumage. The reports weren't believed, and recent ornithological texts go out of their way to label them myth.

Now observations in the Kalahari Desert in South Africa by Cornell University's Tom J. Cade and Gordon L. McLean have proved conclusively that sand grouse do indeed use this unique method of water transport, but only when water scarcity forces them to.

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