

# TOXINS IN COPRA AND BY-PRODUCTS

Moulds generally grow on animal or vegetable matter, particularly when such matter contains moisture. A simple example to be observed in our everyday life is that when a piece of coconut or bread is left unattended, moulds grow rapidly covering the surface. Moulds can spread rapidly through its 'seed' (spores).

In the 1960's in England, it was observed that turkeys fed on groundnut feed were getting diseased. On examination it was established that the feed had been contaminated with a mould. Further research revealed that the mould was *Aspergillus flavus* which when grown on oil-rich media such as groundnut feed, gave a secondary toxic chemical called Aflatoxin. This chemical Aflatoxin is extremely toxic to animals and human beings often causing lethal disease in them.

The offending mould, *Aspergillus flavus* can grow well on improperly dried copra, crude coconut oil and in poonac and produce aflatoxin. While the mould growth will reduce the quality of these products, it can also cause disease in animals and human beings which consume them. It is important to remember that this mould grows only when sufficient moisture is present in the medium. Under-dried copra is the commonest coconut product infected by this mould. When copra is manufactured by sun-drying in the villages, often drying is not completed. Such under-dried copra gets infected with the mould, which spreads rapidly when stored in bags for sometime in dealers' stores. Oil extracted from infected copra can also contain the toxin.

In Sri Lanka, coconut oil is a major food item. The pressed coconut cake, or poonac, forms a major component in animal feed for

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cattle and pigs. It is also used partly in poultry food. In the absence of any quality control measures, use of infected oil and poonac, etc. poses a severe threat both to man and livestock, generally the young being more susceptible to diseases.

As the mould *Aspergillus flavus* grows on harvested or stored products, prevention of contamination is the most important aspect. This is best achieved by controlling the moisture content of the product. As far as copra is concerned, the moisture content should be brought down to 6% to prevent the growth of the mould. Thus it will be seen that proper copra manufacture is the most important consideration to prevent aflatoxin formation. Oil extracted from mould-free copra does not contain any toxin and refined coconut oil too is free from the toxin.

Poonac or the pressed coconut cake is normally placed in gunny bags and heaped. This material is capable of absorbing moisture and would be an ideal medium for mould growth.

Since *Aspergillus flavus* can grow on any oil-containing vegetable matter, many countries have expressed concern over the aflatoxin problem. Contamination of food stuff by aflatoxin poses danger to all countries. Producing countries tend to lose their export market, and the importing countries face the danger of health hazards.

To avert such consequences, it is necessary to have standards for copra manufacture. Those who make copra by sun-drying the kernel should ensure that the kernel is adequately dried. In this respect, it is necessary to educate the producers on ways and means of preventing contamination of foodstuffs by aflatoxin.

Scientists who studied aflatoxin problem have suggested that exposure of crude oil and the pressed meal to direct sunlight is a safe and a cheap method of destroying the toxins that cause diseases in man and livestock.

## WORKSHOP ON

## INTERCROPPING

## AND INTERGRAZING



A workshop on Intercropping and Intergrazing in coconut areas, sponsored by the Food and Agricultural Organization under the UNDP/FAO project RAS/80/032 was held at the Pegasus Reef Hotel, Wattala, Sri Lanka, from 7 to 11 September, 1988.

The workshop was inaugurated by the Hon. Harold Herat, Minister of Coconut Industries and was attended by participants from Indonesia, Malaysia, Maldives, Papua New Guinea, the Philippines, Sri Lanka, Thailand, Tonga, Vanuatu.

The workshop was a forum to discuss opportunities, recent advances and potential for intercropping and animal husbandry in coconut lands. It also gave an opportunity for scientists to meet and to discuss constraints for popularising coconut-based farming systems approach, particularly in the small-holder sector.

The participants visited a number of estates and small holdings where intercropping and animal husbandry had been undertaken. They also visited the Coconut Research Institute.