

# UMS testing pollutant samples

By KAN YAW CHONG

KOTA KINABALU: University of Malaysia Sabah will carry out a study to identify exactly what is contained in the haze particulates collected in Sabah, environmental science lecturer Dr Marcus Jopony said.

He said scientists at the University's School of Science and Technology had been collecting "Total Suspended Particulates" (TSP) samples since Sept. 23 for "finger printing" (identification analysis) purposes.

Using a High Volume Air Sampler, air is sucked through filter papers for three hours each at a rate of five litres per minute, to trap every type of suspended particulates there is, to determine the composition of the pollutants.

"The particles can be organic or inorganic but looking at the colours of the samples, it indicates they are largely organic matter derived from burning of

biomass," he said.

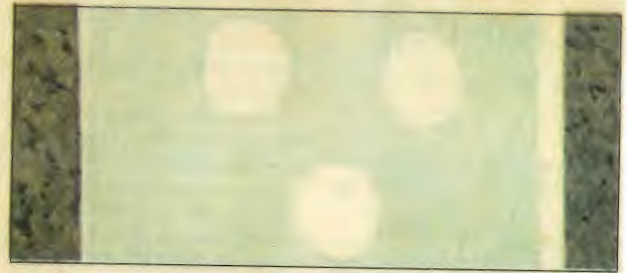
"The burning of different types of wood produce different types of chemicals," he said.

"The inorganic material may not be significant. What we are most interested to know is the chemical composition of the organic materials... whether they made of toxic or non-toxic matter"

He said since Sabah experienced unhealthy haze levels, the need for an answer to these questions is compelling.

"Information elsewhere indicates there are a lot of organic compounds which can be toxic in the long run, some of which are suspected to be carcinogenic (cancer causing). We don't know but that's what we want to identify," Dr Jopony said.

He said the air sampling results show the presence of extremely fine particles which had managed to penetrate 0.45 micron pore size filter papers.



Sample of haze particles. White circles are samples taken for analysis

"The thing that we can see as haze are very, very fine suspended particles called PM10, that is particles 10 micrometres or less in size which can float in the air for a long time and these are the kind of particles that can easily enter our lungs."

National Cancer Society Medical Director, Datuk Dr SK Dharmalingam was quoted in the *Star* last Thursday as saying:

"If wood smoke really does contain hydrocarbon particles,

then these are carcinogenic agents."

So far, medical experts do not refute the possibility that the haze, generated by wood smoke originating in Kalimantan, Indonesia, may cause lung cancer in the long run, but no study has actually been done on the long term effects of haze on the lungs and cancer only manifest itself on the victims 10 to 20 years later, the report says.

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## Report linking throat cancer to wood smoke

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Dr Dharmalingam acknowledged there was a report linking throat cancer to wood smoke.

He referred to a study conducted by Dr John Ho of Hong Kong 30 years ago which found high instances of nasopharyngeal carcinoma (throat cancer) among residents of southern China and Malta.

"It was later found out that the people there usually cooked their meals using wood."

It further quoted Dr Dharmalingam as saying such incidence of cancer was also prevalent among Malaysian Chinese, implying there could be a racial

factor to the problem.

Meanwhile, Dr Jopony said UMS has the expertise and facilities to do partial finger printing but some outside help will be needed to do a complete analysis.

"Finger printing is a complex process," he said.

On Thursday, UMS disclosed that samples of rain water collected the night earlier turned out to be acidic with a pH content of 3.85.

It was the first known case of acid rain over Sabah and could affect rural folk who depended on such source for water supply.

Jopony said although the acidic rain

problem in the State was not as serious as those that fall over industrial areas in the peninsula, safety measure should be taken.

"It can be hazardous for the respiratory system and for those with sensitive skin. Inhaling of dangerous gases from water particles after rain stops is more hazardous," he said.

"A mixture of haze particles which contain organic acid from forest fires and toxic gases from industrial areas could affect health in the long run."

The State Capital and Tuaran recorded a high particulate matter level on Tuesday.