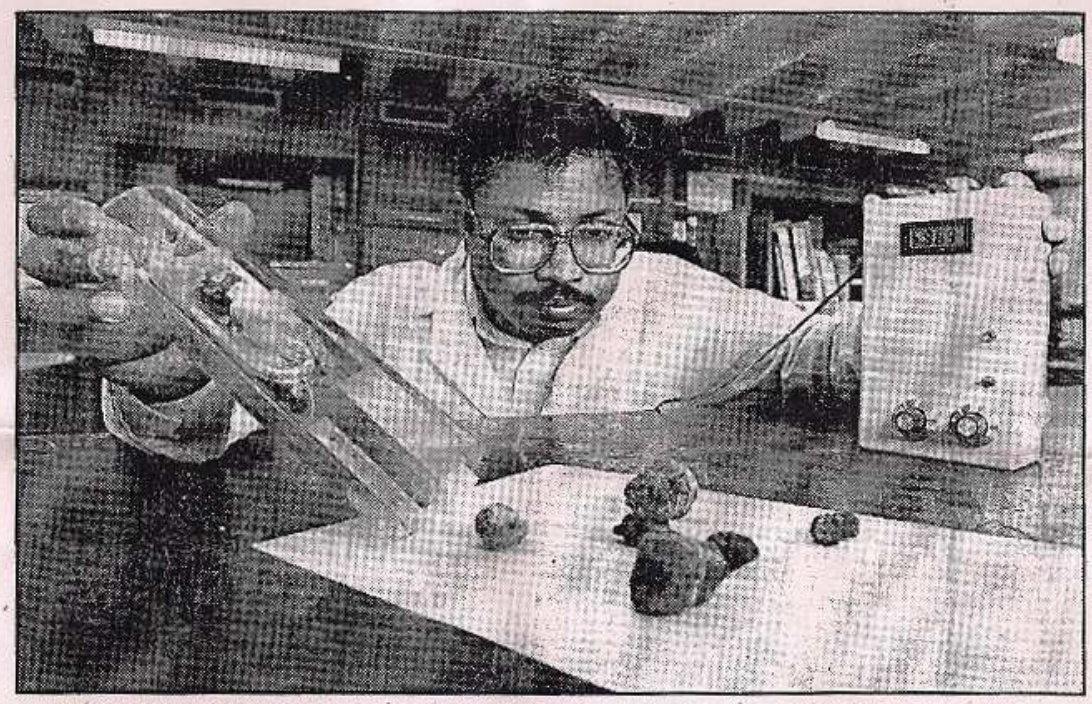
No truffling matter — science could get right up a pig's nose

A British invention may be the answer to every French truffle farmer's prayers, writes Tanya Reed



Master of invention: Dr Persaud and the detector he claims is more reliable than pigs or dogs

It looks like a bizarre new sport. A French farmer hops around his field burying black nuggets beneath trees, then stands back as a boffin from Manchester University tracks them down with a pointed piece of plastic.

But this is no game. The farmer is one of several in the Toulouse area worried about his truffle harvest, and the lecturer, Dr Krishna Persaud, could be the unlikely answer to his prayers.

Tuber melansporum — the élite of the fungus family — is found mainly in France, generally buried about 20cm underground near the roots of oak and hazel trees. A kilo of black truffles can fetch anything from £400 to £1,000, but finding them is a hit or miss business, dependent upon the sniffing prowess of pigs and dogs. But both animals present problems.

"Pigs can be used only when they're young," says Persaud, "because they end up at market by the beginning of the second truffle season. And the problem with dogs is that they cannot concentrate longer than half an hour. It's a race getting a truffle off a dog before he swallows it. They need rewards for sniffing them out, and even then, they often eat the end product."

The solution? Persaud's artificial nose, a foot-long plastic detector that underwent trials near Toulouse this February and will be tested again — in more sophisticated form — this autumn. It could put a lot of pig snouts out of joint.

Persaud, 35, a lecturer in instrumentation at Manchester University's Institute of Science and Technology, has been on the trail of truffles for the past five years, since winning a Royal Society European research fellowship and travelling to Italy to compare notes with Paolo Pelosi, an organic chemist at the University of Pisa.

"The potential of polymers [plastics] as conductors was being whispered about so we studied them to see the possibilities of developing them as sensors," he says. "They were a breakthrough as they could work successfully at a range of temperatures. We wanted something that behaved like a human nose, so we played around with molecular structures until we hit upon the required sensors."

His device homes in on truffle odours, then registers them on a separate meter which logs concentration levels. The detector sniffs out one part per million of truffle odour — on a similar scale to detecting a litre of vapour within a million litres of air.

Of six truffles buried in a field near Cahors, 200km north of Toulouse, Persaud's artificial snout detected four. "It had been raining for three days before I got there and everything was pretty soggy, but I found the truffles in half an hour. The detector worked remarkably well," he says. "A labrador was let loose to find the others, but he only discovered one. I think a mouse got the sixth.".

Persaud is seeking EC funding for more research, and if the tests this autumn are as successful, he hopes the device will be marketed by a commercial company.

The chemical food industry is already interested in his device, and he is also working with a Dutch perfume company on quality checks. But the bad news is that British truffles are rare; Persaud has heard of a species in the Chilterns, but they do not have the same smell as those found in France. His snout cannot be used to unearth them.