

ERIC MILLER/PANOS



## Termites a problem? Try a drop of the sweet stuff

INSTEAD of using toxic pesticides to control the termites that destroy valuable crops and infest buildings, farmers might like to try glucose. In a modified form, the sugar switches off termite immune systems making them vulnerable to fungal attack.

Unlike mammal immune systems which sense pathogens and make antibodies on the fly, termites produce proteins that break apart any harmful molecules. They then build these proteins into the walls of their nests creating a "super-organism immune system", says Mark Bulmer at Towson University in Maryland.

He and his colleagues found a way to disable this system using a modified version of glucose that mimics the molecules found on the surface of a fungus that attacks termites. Released into a termite nest, the sugar derivative binds to the immune proteins that would otherwise destroy the attacking molecules. With these proteins out of action, the nest becomes vulnerable to fungal attack. Sure enough, in Bulmer's experiments, termites that consumed the sugar died within days (*Proceedings of the National Academy of Sciences*, DOI: 10.1073/pnas.0812533106).

The glucose could be an attractive alternative to conventional pesticides because it is simple, non-toxic and readily available. "It's going to degrade very quickly in the environment," Bulmer says.

## The beauty of an average body

THINK Cate Blanchett, not Nicole Kidman. Men prefer averagely shaped women, according to a study that compared the body shapes of ordinary women, *Playboy* centrefolds and professional escorts.

The work, by Rob Brooks at the University of New South Wales in Sydney, Australia, and colleagues, suggests that the popular notion that a waist-hip ratio of 0.7 is the

most attractive only holds if the rest of the body is average (*Behavioral Ecology*, DOI: 10.1093/beheco/arp051).

"The orthodoxy says that you will be attractive with a certain waist-hip ratio no matter how the rest of your body varies. Our study shows this is not the case," says Brooks. His team asked 100 male students to judge the attractiveness of 201 line drawings of female

torsos with different hip, waist and shoulder measurements. The men showed a preference for women with a waist-hip ratio of 0.7 – but only if they had an average-sized waist, hips and shoulders.

When compared with groups of real women, including *Playboy* centrefolds, Australian escorts advertising on the internet and average Australian women between the ages of 25 and 44, the latter group most closely matched the preferred body shape.

## Even brown dwarfs have grey days

ODD cosmic objects halfway between a planet and a star may feature their own weather, enhancing their identity as the universe's mongrels.

Brown dwarfs are not quite massive enough to shine like stars, but nor are they planets because they don't usually orbit stars. They do seem to have clouds, though.

Etienne Artigau of the Gemini South Observatory in Chile and colleagues observed the brown dwarf SIMP0136 every night for five days and found variations in brightness each time they looked, as if light and dark areas were moving or changing shape.

SIMP0136 is cool enough for solid grains to form in its atmosphere. Dust clouds may be shifting under the influence of its particularly rapid cycle of 2.4 hours, say the team, who presented the results at the recent annual meeting of the Canadian Astronomical Society in Toronto.

## Creeping protein is Alzheimer's friend

TANGLED proteins that strangle brain cells from within seem to be what allows Alzheimer's disease to spread through the brain.

Alzheimer's damages the brain via a tangled version of the tau protein. Now Michel Goedert of the Laboratory of Molecular Biology in Cambridge, UK, and his colleagues have shown that tangles spread the disease from site to site. When they injected the brains of ordinary mice with brain material from mice that didn't have Alzheimer's, but were engineered to produce tangles, the tangles spread beyond the injection sites (*Nature Cell Biology*, DOI: 10.1038/ncb1901).

Next the researchers hope to identify and block the agent that allows the tangles to spread.