

By PAT HAGAN

A REMEDY for infections first used by the ancient Egyptians could become a major weapon in the fight against hospital superbugs. A new study shows that gels, soaps and detergents made from copper can kill some of the most deadly bacteria within an hour.

Even washing hospital sheets in a copper solution can keep them sterile for several days, preventing harmful organisms from infecting wounds.

The results of the research, carried out by leading microbiologists at University College Hospital in London, suggest that copper could help the NHS crack the problem of potentially fatal superbugs.

Dr Vanya Gant, one of the experts who spent 18 months testing the copper-based remedies, said these stopped the spread of some of the most dangerous bugs, including MRSA, *Clostridium difficile* and *Acinetobacter*. And, that the copper compounds were also highly effective at disinfecting contaminated laundry.

Professor Michael Wren, another of the microbiologists involved, said the remedy was the first major advance in decades.

'I have been a biomedical scientist for over 40 years and these are the first truly novel antimicrobial compounds I have seen in that time.'

Hospital infections have emerged as one of the biggest problems facing the NHS of late. Official statistics suggest they kill at least 5,000 people a year. The best known bug is MRSA but in recent years, other deadly bugs have also emerged.

Acinetobacter, a bacterium found in water, soil, sewage and food, can cause infections in the bloodstream, wounds and urinary

tract. The number of drug-resistant strains has increased significantly in the past few years.

Clostridium difficile, meanwhile, can cause diarrhoea, fever, nausea and abdominal pain. Deaths from this bug now outstrip those from MRSA, soaring by 69 per cent to 3,800 in 2006.

Most hospitals try to combat superbugs through strict hygiene, mainly involving the use of alcohol-based gels for hands and chlorine products, such as bleach, to sterilise surfaces. But evidence suggests that chlorine provides

only short-lived sterility and corrodes surfaces so much that bugs can actually 'hide' in the grooves and cracks.

Repeated contact with alcohol-based hand gels, meanwhile, can lead to dry and cracked skin.

As an alternative, scientists have been investigating copper-based remedies. As long ago as 2,500BC, copper salts were used as a wound dressing by the ancient Egyptians because of their anti-bacterial properties. Roman and Greek sailors used to place a copper coin in their drinking water to stop it

from fouling during long voyages.

Now a British company, Remedy Research Ltd., has come up with a range of copper-based products for hospitals. It has devised a special formula that allows surfaces to remain sterile for up to 16 hours.

During trials, the doctors at UCH tested the new approach on a patient who had become infected with a highly drug-resistant form of *acinetobacter* after surgery.

Even though he was in an intensive care unit, where there was a strict cleaning regime using chlorine, tests still revealed that

Metallic soap can beat superbugs

Call in the coppers to stop MRSA

the bug was lurking on curtains, under the bed, on the patient's chair and on shelves.

Researchers soaked a cloth in a copper-based disinfectant, wiped all the surfaces down and repeated the tests an hour later. The bug had been almost completely eliminated.

Copper is thought to work in a number of ways. It seems to damage the outer membrane on bacteria, viruses or fungi in such a way that the cell literally implodes.

This destructive process means it is highly unlikely that superbugs will learn to become resistant to the treatment. Copper also disrupts the process by which bacterial DNA replicates itself, helping organisms to thrive and spread.

Professor Hugh Pennington, one of Britain's leading microbiologists, from the University of Aberdeen, said the copper-based soaps and disinfectants were potentially a major breakthrough.

He said most current cleaning compounds were either too toxic, don't work very well or lead to antibiotic resistance.

'But this does not seem to have any of those problems. I think it's very promising but it now needs to be more widely tested,' he said.

The copper cure is expected to become available in NHS hospitals over the next six to 12 months.

FOR more information, e-mail: remedyresearch@btconnect.com

■ **DRINKING** probiotic yoghurt cuts the risk of hospital patients developing symptoms caused by the potentially deadly *C.diff* bug, say researchers. Just two pots a day can stop the diarrhoea, according to the study.

Dr Mary Hickson, who led the study, published in the *British Medical Journal*, said: 'We are not saying that a probiotic will cure *C.diff* because the trial was to prevent diarrhoea associated with it from happening.'