Disinfection in practices: know where the goals are

THE USE OF CHEMICAL AGENTS to clean and disinfect hard surfaces for the purpose of reducing infection risk in veterinary premises has, for many years, been poorly supported with independently regulated data. Disinfectants are the mainstay of any practice biosecurity protocol, but getting clear information regarding product selection is difficult. The main reasons for this are:

- the development of a wide range of antibiotic options;
- the lack of development of new chemistry, simply different brands which use existing compounds;
- the lack of standardised information on efficacy and safety;
- customer appeal based more on the cosmetic effects than product efficacy.

Now, thanks to improved testing methods and a better understanding of the user safety issues, the environment surrounding the subject is changing.

- There is pressure to use fewer antibiotics, especially on animals not displaying clinical symptoms.
- There is greater concern over the possible health issues associated with regular product use.
- EU regulations will eventually give veterinary practices a better understanding of product capabilities.
- Tests kits are now available to measure the viable bacterial count present on surfaces within the practice.
- There is a better understanding that premises in future will need to have reduced levels of biological contaminants – and not just smell clean.

European Regulation (EC) No. 1272/2008 (the CLP Regulation) has introduced requirements for the correct classification, labelling and packaging of substances and mixtures. The CLP labelling regulations guide the safety information on formulations for the purposes of supply; they further reinforce the need for engaging safe practices when handling chemicals. The UK COSHH regulations, together with UK Control of Substances Hazardous to Health 2002 (COSHH) Regulations, means that industry now has very clear guidance in this regard and the legislation can be subject to enforcement by the UK Health and Safety Executive (HSE).

There has also been a shortage of officially regulated information on which product selection could be determined and this situation is likely to remain for the foreseeable future. A wealth of data is offered but there has been no standardisation of test methods and variations of temperature, exposure time and level of organic challenge will produce very different results. Could there be an opportunity for an independent veterinary body to be appointed to introduce test protocol standardisation?

The product test protocols now most frequently cited are those carried out by DEFRA (which were originally created as part of the notifiable disease in animals control programmes) and the EN test methods which are part of an EU initiative introduced as part of the BPR (Biological Products Regulation) which are designed to standardise the regulation of products, including labelling information across Europe.

The DEFRA Disinfectant Approval system is designed to list those products that have been shown by the agency to be effective against organisms that cause key on-farm diseases such as: foot-and-mouth, swine vesicular disease, diseases of poultry (including avian influenza), tuberculosis and a “general orders” category (where salmonella is the test organism) in a standardised test. Complying with these tests is not mandatory for manufacturers but desirable for those companies wishing to supply the agricultural market.

So, how does this test relate to small animal practices in the UK? Although these diseases are not commonly observed, the organisms involved (possibly with the exception of Mycobacterium bovis) should be relatively susceptible to a modern disinfectant. Those disinfectants on the list with dilution rates of below 1:100 should be considered with care.

One criticism of the test is that it is carried out at a very low temperature, 4°C, which is clearly below the room temperature of most premises but may be closer to the temperature on an outdoor hard surface.

The EN process covers a wide variety of tests and will be mandatory for all new products in the future. Confusingly, advertising a product as being evaluated against one type of pathogen (say bactericidal) does not help a user looking for a suitable virucidal agent.

The test cited most frequently at the moment is EN 1656 (bacterial suspension test), which demonstrates efficacy against four bacterial strains: P. aeruginosa, S. aureus, P. vulgaris and Enterococcus hirae at a temperature of 10°C, with a 30-minute contact time and a choice of high or low organic challenge.

The prescribed contact time stated in the method used is sometimes considered too long for routine surface disinfection uses, but shorter contact times are possible within the scope of the method.

The use of safety information and hazard symbols on chemicals is controlled by the HSE, and is described within the MSDS (material safety data sheet) process. This is a mandatory requirement and should appear on all products which are classified as “dangerous”.

The UK COSHH regulations place the responsibility for assessing potential risks on the user in the workplace. Correct labelling is vital in analysing these risks, but it does cry out for some impartial guidance to provide information which is clear and practical for users.

Veterinary practices may have different requirements for these chemical agents and so the requirement for advice goes beyond the simple label instruction.

Checking the results of a disinfectant protocol on-site is difficult for all practices. Test swabbing surfaces, then applying the antibiotic sensitivity test process, will not give a helpful indication of the amount of challenge. Unless veterinary premises are tested for the presence of microbial contaminants, then it is impossible to gauge the effectiveness of a disinfectant protocol.

Test kits are now available from J.A.K Marketing which will give a number for the viable bacteria present on any surface sampled. These tests should be performed regularly in order to monitor trends and improve disinfection regimes.

So, although the picture is still not crystal-clear, there are some basic ground rules that practices can apply:

1. Do make a product selection based solely on the information provided by the manufacturer.
2. Ask your supplier for details of current DEFRA approvals and the dilution rates. The EN process is not a product approval situation, but any relevant information should also be supplied.
3. Any efficacy data supplied should be critically analysed to ensure their independent origin, that the reduction of the target organism was log 4 or greater, that the test was carried out in a solution containing organic contaminants and the exposure time was less than 30 minutes.
4. All chemicals should be accompanied by a material safety data sheet (MSDS) and carry hazard warning information.
5. In order to facilitate a reduction in the amount of biological contamination in practices it is advisable to carry out regular environmental bacterial counts.

And, always remember the golden rules for disinfectant use:

- Always add concentrate to a measured amount of warm water.
- Always squat or apply solution to an area for treatment; avoid atomising product.
- Ensure the correct dilution is used by measuring concentrate and water accurately.
- Wear gloves and eye protection when handling concentrated product.
- Disinfectants in general only work when the surface is wet and because of this it is important to use fast-acting chemistry.
- Biological organisms are not controlled by fragrances.
- Unless you test your premises for the presence of contaminants, you can never know if your disinfectant regime is effective.

For further information, refer to the DEFRA Approved Disinfectant UK list, the ECHA website and the RCVS practice standards scheme. For advice on disinfectant protocols and practice environment challenge tests, contact J.A.K Marketing on 01347 878697.