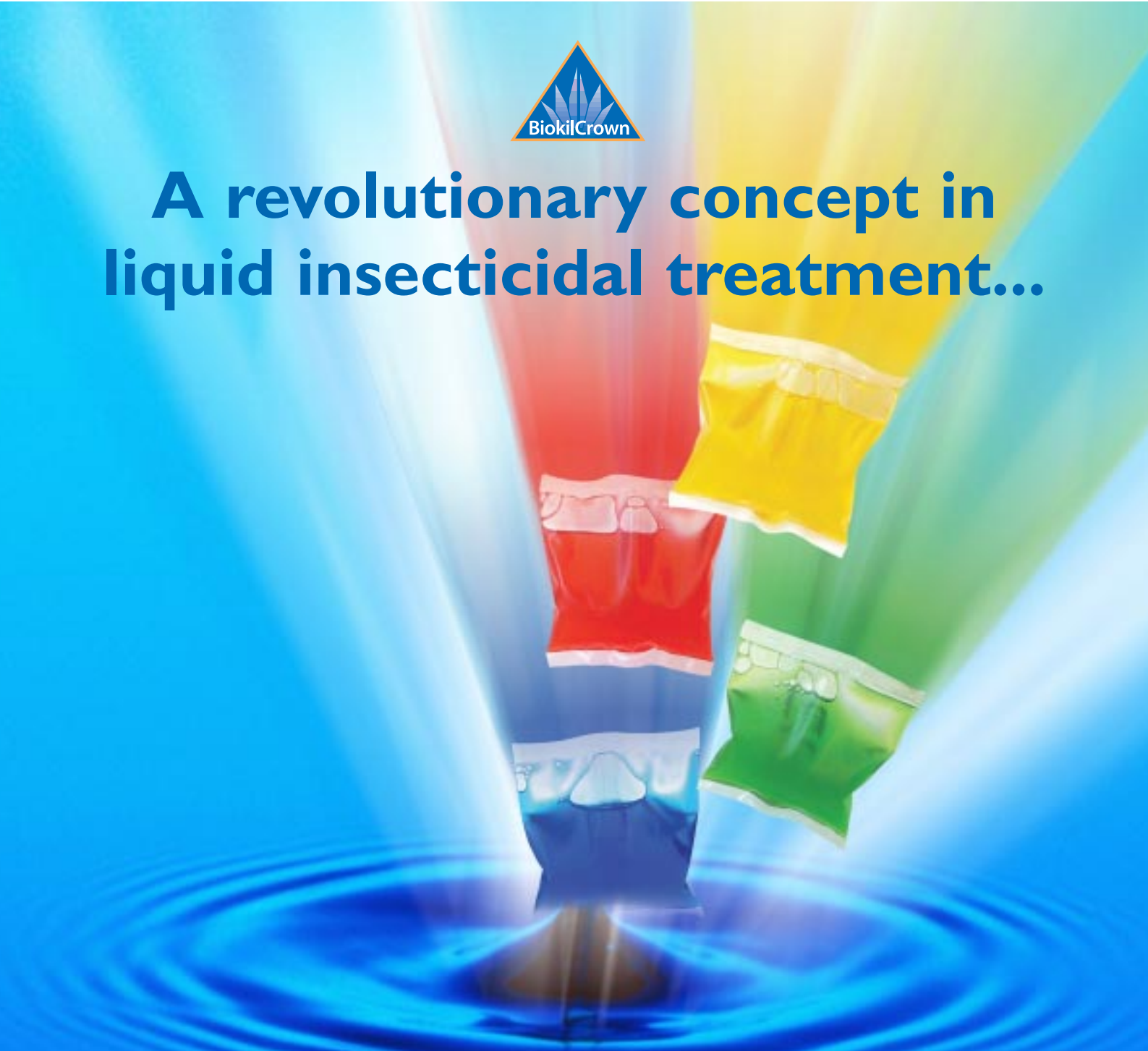
BiokilCrown

A revolutionary concept in liquid insecticidal treatment...



...the WSS range

BIOfly WATER SOLUBLE SACHET

BIOsect WATER SOLUBLE SACHET

BIOsafe WATER SOLUBLE SACHET

BIObug WATER SOLUBLE SACHET

BIOsect
WATER SOLUBLE SACHET

BIOfly
WATER SOLUBLE SACHET

A new range of insecticides and packaging design

The Company

Biokil Crown Ltd is an independent, privately owned British company having grown to become one of the U.K,s largest manufacturers and suppliers to the Building Industry of Insecticides and Fungicides, Timber Preservatives, Dry Rot Biocides and Damp Proofing Chemicals.

We operate a national delivery service from our sites in Nottingham (England) and Hamilton (Scotland) where products are manufactured under ISO 9002 Quality Standard selling direct to the end user.

The Concept

Recently commissioned market research within the pest industry suggested there are major concerns with safety, disposal, stability, portion control, current weight of products and product recognition.

Biokil Crown also identified the need for improved cost saving and easy-to-use preparations against crawling and flying insects. We have, therefore, developed an exciting and revolutionary new range of broad spectrum insecticides in water soluble sachets all registered for use in the UK.

The Solution...The WSS Range

PROTECTING THE ENVIRONMENT — NO BOTTLE

SAFETY:
Sealed water soluble sachets containing insecticide in solution

- no exposure of operators to concentrated pesticide
- no need for dust or fume masks when handling sachets or when mixing
- no airborne particulates given off when mixing or spraying
- no leaking containers or spills likely in the back of vehicles, service bags or storage areas

DISPOSAL:
Outer packaging not contaminated with insecticide like conventional containers

- packaging can be disposed of in general refuse
- eliminates costs for storage, collection, listing and disposal to licensed sites
- no need to clean out empty bottles
- no risk to children handling "empty bottles" which may contain pesticides
- no release of pesticides into the environment from "empty containers"

STABILITY:
Extremely stable products with no phase separation in concentrate or diluted form

- very even dose treatment
- no variation in active ingredient concentration after dilution
- no need to continually agitate for consistency of active mix
- mixes can be retained for later use, no need to throw away insecticide if left in sprayers
- no clogging of nozzles or valves

PORTION CONTROL:
Sachets contain a measured quantity of insecticide concentrate

- no measuring or guessing necessary
- dilutions very easy to prepare
- 1, 2 and 5 litre mixes available as required
- no need to mix 5 litres when only 1 litre is needed for a job
- technician will have less waste insecticide therefore reduces cost
- difficulty in trying to extract last residues in conventional concentrate bottles removed

PACKAGING:
No heavy bottles, containers or packaging

- simply tear off top of outer bag, drop inner sachet into water and use
- less room taken up in storage and transport
- sachets are ideal for technicians to carry in work bags
- footmen are especially at an advantage
- significant reduction in plastic waste
- significant reduction in paper waste

RECOGNITION:
All products in the WSS range are colour coded

- Quick and easy recognition
- Safety is enhanced
- Once diluted sachets form a clear solution

VALUE FOR MONEY:
We manufacture these products with you in mind

- All the benefits of this new technology at less than current technology prices

BIObug WATER SOLUBLE SACHET

BIOsafe WATER SOLUBLE SACHET

ed to suit the needs of the pest control industry

The Technology

The Biokil Crown range of WSS insecticidal treatments are based on the novel water internal microemulsion technology in which all organic solvent components are removed from the formulation. The surfactant system used in these microemulsions are fully biodegradable and contain no alkyl phenol or alkyl phenol ethoxylate components.

Microemulsions are significantly different to conventional pest control insecticide formulations such as Emulsifiable Concentrates (EC), Suspension Concentrates (SC), Wettable Powders (WP) and Oil in Water Emulsions (EW) and offer many distinct advantages:

- Extremely stable concentrates with no phase separation
- Extremely stable dilutions with no phase separation allowing mixes to be retained for later use
- Very even dose treatment
- Spontaneous inversion to (oil/water) microemulsion on dilution with water
- Fully solvent free technology with no volatility issues
- No deposits or stains on delicate surfaces

One of the key features of microemulsion chemistry is the very high level of thermodynamic stability of both concentrates and the dilutions. All of the conventional types of formulations mentioned previously show a large degree of phase separation (creaming to the surface or sedimentation to the bottom) when in the diluted form and in the case of SC and EC formulations even the concentrated forms can be prone to quite severe separation.

This can have a major impact on the level of active ingredient applied at any point during a treatment which can take a few hours and this can range from almost zero applied active ingredient to levels of active ingredient which can be in orders of magnitude 5 times higher than the required dose i.e. the treatment can vary from not working to the point where the level of active ingredient applied can pose a serious toxic risk.

This can be demonstrated by reference to the following experimental data where samples were taken from the top, middle and bottom 10% portions of two typical formulations diluted to their "in use" level and these portions were analysed for active ingredient level and compared with BioSect and BioFly

EW/SC vs ME (microemulsion) active ingredient (ai) separation data

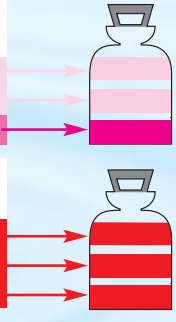
The EW /SC formulation exhibits severe sedimentation with the top and middle layers containing only approximately 40% of the expected active ingredient whilst the bottom 10% contains 5 times the expected active ingredient level, the microemulsion (BioSect) in contrast has exactly the same level of active ingredient throughout the entire fluid content.

EW/SC DELTAMETHRIN FORMULATION

Position	Expected ai %	Actual ai level %	Disparity in ai	Resulting in
Top layer	0.0066	0.0025	-62%	$^{2}/_{3}$ shortfall in ai level - poor control
Middle layer	0.0066	0.0025	-62%	$^{2}/_{3}$ shortfall in ai level - poor control
Bottom layer	0.0066	0.0330	+400%	5 times too much ai - toxic risk

ME (MICROEMULSION) DELTAMETHRIN FORMULATION (BIOSECT)

Position	Expected ai %	Actual ai level %	Disparity in ai	Resulting in
Top layer	0.0066	0.0066	0%	good control at minimum risk
Middle layer	0.0066	0.0065	-1.5%	good control at minimum risk
Bottom layer	0.0066	0.0067	+1.5%	good control at minimum risk



EC vs ME (microemulsion) active ingredient (ai) separation data

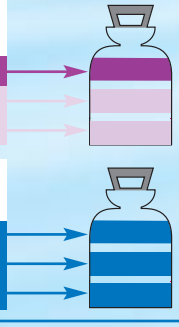
The EC formulation exhibits severe "creaming" with the top layer containing approximately 2.5 times the active ingredient level expected, the middle and bottom layers only contain approximately 40% of the expected active ingredient level, the microemulsion (BioFly) in contrast has exactly the same level of active ingredient throughout the entire fluid content.

EC ALPHA-CYPERMETHRIN FORMULATION

Position	Expected ai %	Actual ai level %	Disparity in ai	Resulting in
Top layer	0.135	0.3370	+150%	$2^{1}/_{2}$ times too much ai - toxic risk
Middle layer	0.135	0.0540	-60%	$^{2}/_{3}$ shortfall in ai level - poor control
Bottom layer	0.135	0.0510	-62%	$^{2}/_{3}$ shortfall in ai level - poor control

ME (MICROEMULSION) ALPHA-CYPERMETHRIN FORMULATION (BIOFLY)

Position	Expected ai %	Actual ai level %	Disparity in ai	Resulting in
Top layer	0.135	0.1350	0%	good control at minimum risk
Middle layer	0.135	0.1350	0%	good control at minimum risk
Bottom layer	0.135	0.1360	+1%	good control at minimum risk



The Range & Prices

FREE DELIVERY...NO MINIMUM ORDER...DIRECT FROM THE MANUFACTURER

BIOsect WATER SOLUBLE SACHET

Biosect WSS HSE No 7748

A concentrated water internal microemulsion containing Deltamethrin 2.5% w/w placed inside a water soluble sachet. Specifically intended for use against a wide range of crawling insects although its spectrum of activity also includes flying insects.

In routine maintenance operations 1 x 30gm sachet is diluted with 5 litres of water (= typical 1% deltamethrin formulation used at 75mls per 5 litres) therefore, 13 x 30gm sachets are equivalent to 1 litre of standard conventional concentrates.

30gm sachet		
pack of 28	**£ 72.20**	(equivalent to £33.52 per 1 litre of a typical conventional product)
pack of 56	**£129.60**	(equivalent to £30.09 per 1 litre of a typical conventional product)
pack of 112	**£233.40**	(equivalent to £27.09 per 1 litre of a typical conventional product)
12gm sachet		
pack of 28	**£ 44.30**	(makes up to 56 litres of 'in use' fluid)
pack of 56	**£ 77.10**	(makes up to 112 litres of 'in use' fluid)
pack of 112	**£136.40**	(makes up to 224 litres of 'in use' fluid)

BIOfly WATER SOLUBLE SACHET

Biofly WSS HSE No 7747

A concentrated water internal microemulsion containing Alpha-cypermethrin at 5% w/w placed inside a water soluble sachet. Specifically intended for use against flying insects such as flies and moths although its spectrum of activity also includes crawling insects.

In routine maintenance operations 1 x 25gm sachet is diluted with 5 litres of water (= typical 5% alpha-cypermethrin formulation used at 25mls per 5 litres) therefore, 20 x 25gm sachets are equivalent to 500mls of standard conventional concentrates.

25gm sachet		
pack of 40	**£ 84.20**	(equivalent to £42.10 per 500mls of a typical conventional product)
pack of 80	**£152.70**	(equivalent to £38.18 per 500mls of a typical conventional product)
pack of 160	**£280.90**	(equivalent to £35.11 per 500mls of a typical conventional product)
10gm sachet		
pack of 40	**£ 51.40**	(makes up to 80 litres of 'in use' fluid)
pack of 80	**£ 91.60**	(makes up to 160 litres of 'in use' fluid)
pack of 160	**£169.30**	(makes up to 320 litres of 'in use' fluid)

BIOsafe WATER SOLUBLE SACHET

Biosafe WSS & Biosafe ULV
HSE No 0000

A concentrated water internal microemulsion containing natural pyretherins at 3% w/w synergised with Piperonyl butoxide at 15% w/w placed inside either a water soluble sachet or HPDA bottles (ULV product). Specifically intended for the control of crawling and flying insects in food storage and food preparation areas by a combination of application techniques such as surface spray, space spray/misting and by ULV application.

2 x 125gm sachets per 5 litres of water will cover 100 sq.metres by surface application or 1,665 cubic metres by space spray.

125gm sachet	
pack of 2	**£ 29.40**
pack of 4	**£ 43.60**
pack of 8	**£ 75.30**

2 x 25gm sachets per 1 ltr of water will cover 10 sq metres by surface application or 332.5 cubic metres by space spray.

25gm sachet		
pack of 10	**£ 35.80**	(makes up to 20 litres of 'in use' fluid)
pack of 20	**£ 63.40**	(makes up to 40 litres of 'in use' fluid)
pack of 40	**£104.30**	(makes up to 80 litres of 'in use' fluid)

1 Litre ULV		
pack of 2	**£ 87.40**	(£43.70 per litre)

BIObug WATER SOLUBLE SACHET

Biobug WSS HSE No 7721

A concentrated water internal microemulsion containing Alpha-cypermethrin at 5% w/w and Tetramethrin at 5% w/w placed inside a water soluble sachet. Specifically intended for use against nuisance pests such as bed bugs, tick, fleas etc although its spectrum of activity also includes crawling and flying insects.

In routine maintenance operations 1 x 25gm sachet is diluted with 5 litres of water (= typical 5% alpha-cypermethrin and tetramethrin formulation used at 25mls per 5 litres) therefore, 20 x 25gm sachets are equivalent to 500mls of standard conventional concentrates.

25gm sachet		
pack of 40	**£ 96.30**	(equivalent to £48.15 per 500mls of a typical conventional product)
pack of 80	**£174.70**	(equivalent to £43.68 per 500mls of a typical conventional product)
pack of 160	**£332.30**	(equivalent to £41.54 per 500mls of a typical conventional product)
10gm sachet		
pack of 40	**£ 53.80**	(makes up to 80 litres of 'in use' fluid)
pack of 80	**£ 98.90**	(makes up to 160 litres of 'in use' fluid)
pack of 160	**£182.40**	(makes up to 320 litres of 'in use' fluid)

The contact details...

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