



ARCTEC

A Centre of Excellence for Entomology

World leaders in independent consultancy, evaluation and
development of arthropod pest control technologies



ARCTEC

www.arctec.lshtm.ac.uk | Tel: +44207 927 2883

Quality Assured

Our Experts

We are a highly skilled team of trial managers, research scientists, entomologists and clinicians with many years of experience in the laboratory and field, including disease-endemic settings. All our staff are fully trained in Good Clinical Practice (GCP).

Our world leading team will work with you from idea generation and early product development through to product registration and full evaluation.

Standardised and Bespoke Testing Methodologies

We use robust testing protocols, which are designed to meet the standards set by organisations and regulatory authorities such as the World Health Organization (WHO), the Environmental Protection Agency (EPA), the Medicines and Healthcare Products Regulatory Agency (MHRA) and the Biocidal Products Regulation (BPR). We can also tailor testing protocols to comply with other authorities worldwide.

If guidelines for testing a particular product are not available, our highly experienced and innovative scientific team will develop robust and appropriate experimental protocols.

We are fully compliant with the [Medicines and Healthcare Products Regulatory Agency \(MHRA\)](#), local and [NHS Ethics Committees](#) and the [Biocidal Products Regulation \(BPR\)](#). We can also tailor testing protocols to comply with other requested authorities.

Client Journey

We pride ourselves on our ability to adapt to our clients' needs, offering a personalised service for every project at any stage of the development process. We are at the forefront of research, so we can assist with ideas and opportunities to develop new technologies/products. We work with clients throughout the product development phase, providing fast and robust results, leading to product registration.

Efficacy & Evaluation Services

We work on the development and evaluation of a variety of product types for the public health and veterinary sectors, including:

Repellents

Arm-in-cage tests, semi-field and full field trials of topical repellents, spatial repellents, impregnated textiles.

Insecticidal Products

Laboratory and field testing of insecticides (adulticides, larvicides), desiccant dusts and biocontrol agents. WHOPEs PQ evaluation of long lasting insecticide treated nets (LLINs), Indoor Residual Sprays (IRS), paints, formulations and textiles.

Phase I - cone, tube, sphere and tunnel tests

Phase II - semi-field trials | Phase III - field trials

Lures and Traps

Identification of novel attractants and lures using chemical ecology techniques. Laboratory development of lures using olfactometers and semi-field evaluation of traps using free flight rooms. Evaluation of traps in the field, globally.

Head Lice Treatments

Laboratory *in-vitro* and full clinical trial testing against head lice adults, nymphs and eggs

After-Bite Treatments

In-vivo development tests and full clinical trials on products that relieve symptoms/itchiness and medicinal products that treat the bites.

Veterinary Products

Laboratory and full field testing of products designed to detect (e.g. traps) or protect (e.g. repellents and insecticides) domestic animals and livestock against nuisance and vector arthropods such as midges, horseflies, stable flies and house flies, amongst others.



Testing Facilities

Laboratory

Our state-of-the-art laboratory facilities include specialist, controlled environment rooms for testing of repellents, attractants and insecticides [e.g.WHO cone tests, tube tests, tunnel tests, sphere tests].

We have analytical chemistry capabilities including gas chromatography (GC), GC-electroantennography and HPLC.

Our specialist insect behaviour rooms are designed to evaluate attractants and repellents, with EthoVision video recording capabilities.

Free Flight Rooms

Our free flight rooms comprise two sealed, controlled environment chambers, interconnected by a door or window, designed to simulate a room or household under more natural conditions. Insects can be released safely into these rooms to evaluate spatial repellents, traps, bed nets and insecticide treated clothing/textiles.

The rooms can also be transformed into a “laboratory bedroom” for the testing of bed bug lures and traps.

State-of-the-art video surveillance technology can also be fitted to monitor and record insect behaviour during testing.

Field Sites & Experimental Huts

As well as access to field sites in the UK and Europe, we collaborate with partners at field sites across the world in countries including Burkina Faso, Benin, The Gambia, Tanzania, Brazil, Colombia, United States, India, Thailand and Laos, many of which are WHO collaborator sites for Phase III trials. We also have access to experimental huts across Africa to conduct semi-field trials in a more natural setting.

In addition, we have access to field sites for efficacy trials of repellent and insecticidal products for animal use [e.g. livestock, domestic pets, equines].



Insectaries

Our state-of-the-art insectaries house one the world’s largest and most diverse collection of arthropods, including:

- 12 different mosquito strains of the genera *Aedes*, *Anopheles* and *Culex*
- Insecticide resistant strains available
- Biting midges of the genus *Culicoides*
- Bed bugs
- Sandflies
- House dust mites
- Ticks
- House flies
- Stable flies
- Cockroaches
- Triatomine bugs
- Clothes moths

We have the capacity to work with almost any arthropod species, and are happy to accommodate requests for testing of any arthropod not listed above.

Public Engagement & Campaigns

Our specialist team can design and implement large scale campaigns for educating and raising awareness of vector-borne diseases in communities in disease-endemic countries.

Our specialist entomologists can also attend events at schools and science festivals to entertain, educate and engage about topics including travel health, parasites and headlice.

We can also offer bespoke educational packages.

If you would like us to attend your event please contact us at: arctec@lshtm.ac.uk

For more information about our annual Bug Off! Travel Health Awareness Campaign, please see www.bug-off.org or e-mail for more information.



Consultancy, Monitoring & Training Services

Consultancy Services

ARCTEC's team of world leading entomologists and clinical trials specialists offer consultancy on a wide range of areas for product development and evaluation, including:

- All aspects of vector borne diseases, vector biology and vector control
- Generation of ideas and innovations to solve a particular problem, or address an unmet market need
- Strategic research and development programmes and planning
- Efficacy testing for product authorisation
- Active ingredient guidance
- Study design, preparation of protocols, risk assessments, data analysis and data interpretation
- Good Clinical Practice
- Review of scientific proposals and literature
- Review of company policies and Health and Safety materials relating to public health risks

Monitoring of Studies

Our experienced trial managers and clinical trial specialists are all GCP trained and offer trial oversight of:

- Good Clinical Practice (GCP)
- Data Management
- TMF creation and management
- Site visits (laboratory and field) for monitoring and quality assurance

Training & Education

We offer bespoke training packages for laboratory and field scientists wishing to specialise in entomology:

- Basic and extended vector biology and control
- Laboratory and field repellency trials
- WHOPEs Phase I, II and III trials
- Good Clinical Practice (GCP)
- Data collection and case report forms
- Randomised controlled trials



Contract Entomologist Services

Do you need a trained entomologist for a particular piece of work in one of your studies, or do you need an entomologist to run a project? Look no further.

As a centre of excellence, we offer direct access to our world leading entomologists and clinical trials specialists to suit your needs.

We offer a team of highly trained entomologists with a range of qualifications from technicians and research assistants to trial managers with up to 22 years' experience:

- Trained to BSc, MSc and PhD level
- Laboratory and field experts
- Extensive experience of working in developing countries and with partners in developing countries
- All trained in Good Clinical Practice
- Experienced in WHOPEs Phase I, II and III trials

Why sub-contract one of our expert entomologists?

- Trusted experts
- Quality assurance
- No need for long winded advertising and recruitment
- Short or long term contracts
- Study design and statistical analysis support
- Administrative support
- Provision of standard operating procedures (SOPs) and risks assessment