

IAEA Briefs: new series for policymakers

The IAEA has launched a new publication series — IAEA Briefs — to inform decision makers about how they can best make use of its services to enhance capacity and support development. Launched in autumn 2016, IAEA Briefs cover a wide range of topics relating to the applications of nuclear science and technology and also offer recommendations for consideration to IAEA Member States.

The Briefs also cover region-specific issues. The IAEA Brief *Enhancing Patient Care In Africa Through Safe Medical Imaging* highlights the importance of having well-qualified medical physicists in Africa to handle high-tech medical imaging equipment such as multi-slice helical computed tomography (CT) scanners.

Another IAEA Brief, *Detecting and Treating Cervical Cancer Using Diagnostic Imaging Techniques and Radiotherapy*, focuses on the IAEA’s support to Member States in Latin America and the Caribbean, and how nuclear medicine and radiation therapy can offer rapid diagnosis and effective treatment for various types of cancer, including cervical cancer. The document details IAEA assistance

available to Member States to enhance their national cancer care programmes for cervical cancer through training, expert assistance, fellowships and the procurement of equipment.

The third in the IAEA Brief series, *Using Nuclear Techniques to Assess Breastfeeding Practices for Better Nutrition and Health*, draws attention to the use of stable isotope techniques to help evaluate activities to improve infant and young child feeding practices. The Brief provides information about various IAEA projects in Member States to help them acquire competencies in applying these techniques, which can provide accurate and objective data on breastfeeding practices.

The IAEA plans to continue adding to its collection of Briefs and Factsheets.

IAEA Factsheets

The IAEA is also updating its collection of factsheets and has included new information of interest. The factsheets highlight the IAEA’s multi-dimensional work in the peaceful applications of nuclear technology in energy, health, industry, food and agriculture, nuclear safety and security, and safeguards and



verification. For example, under the theme of nuclear safety and security, factsheets are available on a range of areas, including computer and information security, the Convention on the Physical Protection of Nuclear Material and its Amendment, and nuclear forensics.

Another factsheet explaining the IAEA’s support and activities to fight disease-transmitting mosquitoes can be found under the health theme, entitled: *The Zika Virus Mosquitoes: How can the sterile insect technique help?*

Access the IAEA Briefs and the collection of factsheets online, here: iaea.org/publications/factsheets

— By Aabha Dixit

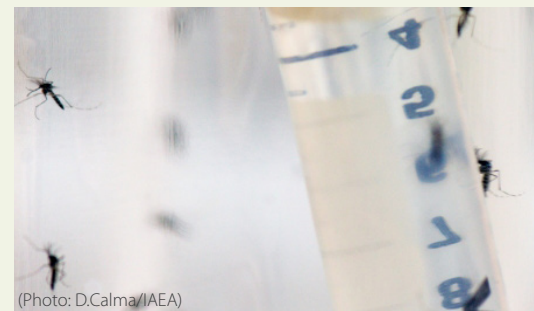
New method advances research on controlling mosquitoes using nuclear techniques

A pioneering method unveiled in December 2016 for separating male and female mosquitoes could be a major step towards using the nuclear-based sterile insect technique (SIT) to control the insects that transmit diseases such as Zika, dengue and chikungunya.

SIT involves using ionizing radiation to sterilize mass-reared insects of the target pest and then releasing them into nature where they mate with wild insects, resulting in no offspring and, over time, reducing the overall insect population. SIT has been employed successfully in over 40 countries against agricultural pests such as fruit flies, tsetse flies, screwworm and moth pests, and research on its

application against Aedes mosquitoes has intensified in the wake of the Zika crisis last year. The IAEA, in partnership with the Food and Agriculture Organization of the United Nations (FAO), is spearheading global research in the development and application of SIT, including against Aedes mosquitoes.

The main challenge facing researchers in scaling up the use of SIT against various species of mosquitoes has been the lack of a reliable method to remove females from among the mosquitoes that are released. Eliminating females before release is crucial to the use of SIT against mosquitoes, because it is the bites by female mosquitoes that transfer diseases.



(Photo: D.Calma/IAEA)

In countries where the use of SIT against Aedes mosquitoes is being tested or where testing is planned, such as Brazil, China and Mexico, a manual method is used to separate males from females. Female pupae — in the lifecycle of the insect, this is the stage between larvae and adult — are larger than male pupae, offering a way to distinguish and remove females before release. However, this method is very labour-intensive and is therefore not practical for upscaling to the tens of