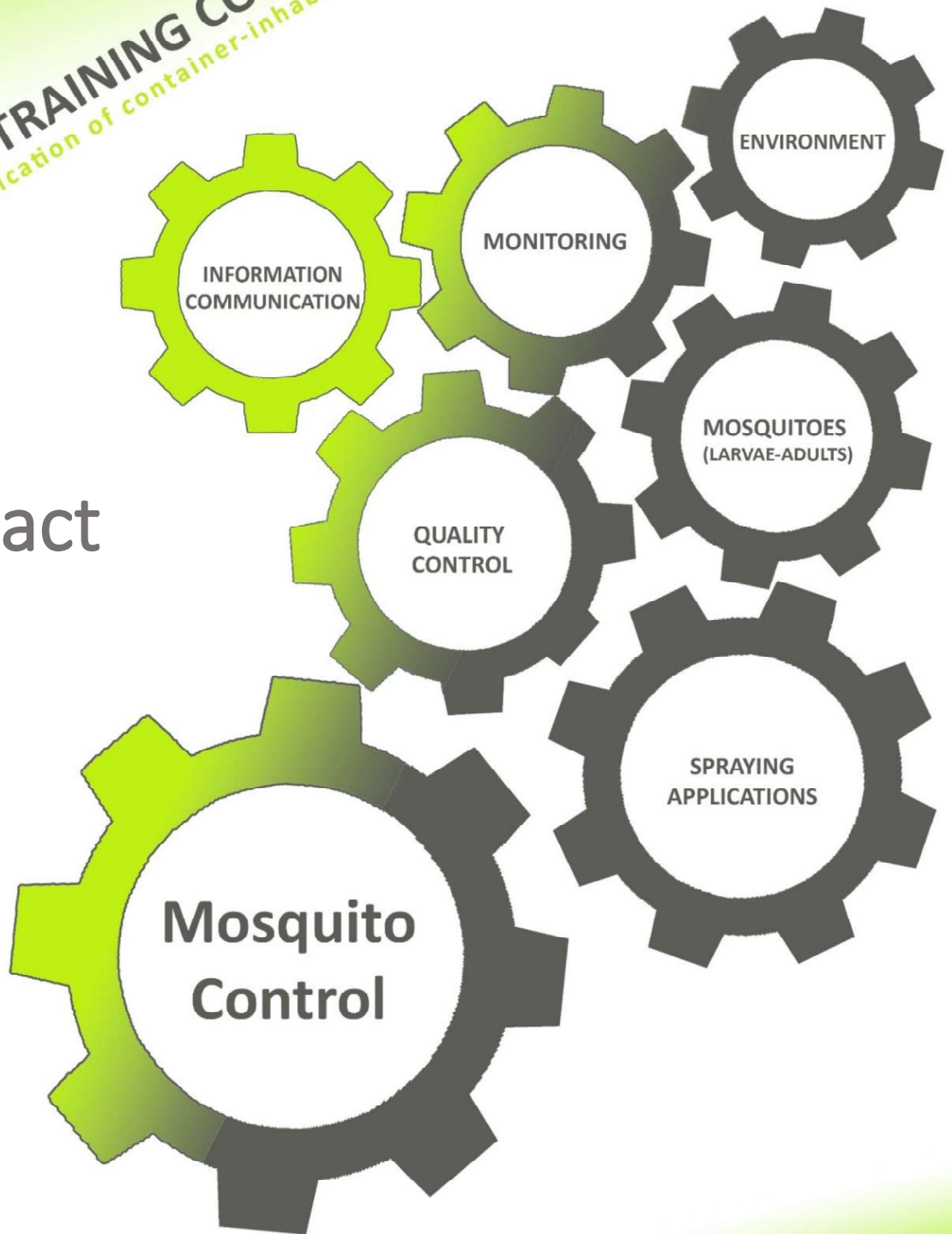


10th EMCA WORKSHOP 28-29/11/2022
Best Practices

3rd TRAINING COURSE
Identification of container-inhabiting *Aedes* mosquitoes' eggs

30/11/2022

e Abstract
Book



Best practices for detecting invasive mosquitoes at Points of Entry

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Since the Asian tiger mosquito has been involved in local transmission of mosquito-borne diseases in Europe, active surveillance for invasive mosquito species (IMS) has become of the utmost importance.

The main sites at risk for introduction of IMS are the so-called Points of Entry (PoE), e.g., storage sites for imported used tyres, greenhouses for imported aquatic plants, international airports, container terminals, highways, and road axes that originate in colonized areas. Several approaches can be applied for the surveillance at the PoE. Each of them has different costs and chances of success. After a decade of surveillance at PoE, we report our observations on the main methods applied in Piedmont (Italy): eggs collected by ovitraps, adults collected by BG-Sentinel traps, and larvae collected by breeding-sites sampling. Ovitrap are low-cost and easy to use, but egg identification requires particular skills and equipment. Morphological identification of the late larval instars obtained by hatching out eggs or adults obtained by rearing the larvae is much easier. In the last three years (2019-2021), a total of 581 masonite strips (used as oviposition substrate) were placed in ovitraps at PoE, collected and submerged to obtain larvae. The larvae were later reared to the adult stage, obtaining only *Aedes albopictus* and *Aedes geniculatus* specimens. In the same period, from a total of 199 BG-Sentinel trapping sessions at PoE, only an IMS specimen (*Aedes japonicus*) was captured (0.5%).

Larval search consisted in search and sampling immature mosquito stages, particularly L3-L4 larvae and pupae, on small man-made water containers that accumulate dead leaves, algae and/or other organic matter. This kind of inspections often involved the areas surrounding the PoE, focusing on sites that offer conditions conducive to the development of mosquitoes, e.g., cemeteries. Larval samples collected from 126 different sites were reared, obtaining IMS specimens (*Ae. japonicus* and *Aedes koreicus*) from 16 sites (13%).

Undoubtedly, larval search takes longer than other methods, but this method allowed us to obtain a greater amount of data on introduction and spread of IMS.