

Alternatives to Dry Ice Used in Mosquito Traps for Surveillance

For vector surveillance, many programs use dry ice-baited traps to collect host-seeking mosquitoes. Commonly used traps include **CDC light traps** baited with both dry ice and a light source, and **BG-Sentinel traps** baited with both BG-Lure and dry ice. Dry ice serves as an inexpensive and convenient source of carbon dioxide (CO₂) to attract mosquitoes.

In case of a dry ice shortage, consider other options

- ◆ Traps can be used with their originally designed lures (e.g., BG-Sentinel traps using the BG-Lure only, CDC light traps using light only). *Aedes aegypti* and *Ae. albopictus* may not be efficiently captured without CO₂ or another attractant.
- ◆ CO₂ tanks provide the best alternative source of CO₂. Use of CO₂ tanks should be balanced with increased program costs and logistical considerations.
- ◆ Yeast fermentation^{1,2} could provide a temporary alternative CO₂ source if dry ice is not available. Yeast fermentation produces lower levels of CO₂ than dry ice. Traps baited in this way capture fewer total numbers of mosquitoes, though species diversity appears similar. Methodology should be validated by programs for their surveillance targets prior to broad use.

Other types of trap not requiring CO₂

- ◆ For West Nile and St. Louis encephalitis virus surveillance, with *Culex* spp. mosquitoes as the surveillance target, two other types of trap are useful, the **gravid trap** and the **resting trap**.
- ◆ Both gravid and resting traps collect a lower species diversity and fewer total number of mosquitoes, making identification of the captured mosquitoes easier.
- ◆ Gravid mosquitoes are valuable for surveillance because they have already had at least one vertebrate bloodmeal.
- ◆ Resting traps can collect freshly engorged mosquitoes, which are valuable for surveillance because their bloodmeals can be independently evaluated for contact with an infectious vertebrate.
- ◆ For West Nile virus surveillance, CDC gravid traps are the most useful type of trap, and they do not require CO₂.
- ◆ *Aedes* spp. surveillance programs may also consider adopting gravid ovitraps (e.g., autocidal gravid ovitrap trap) as part of their routine surveillance.³



CDC light trap



BG-sentinel trap

References

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3. Centers for Disease Control and Prevention. 2016. Surveillance and control of *Aedes aegypti* and *Aedes albopictus* in the United States. <https://www.cdc.gov/mosquitoes/pdfs/mosquito-control-508.pdf>



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