Appendix B: Sensitivity analyses for life history parameters ($\Lambda$: survival rate per day, $\sigma$: standard deviation of emergence, $r$: number of eggs per day)

**With mass-trapping**

Fig. B1 Sensitivity analyses for the number of traps ($T$) and survival rate per day ($\Lambda$) in mass-trapping (MT). A: type -L (Lepidopteran pests), B: type -C (Coleopteran pests).

Eradication effects are evaluated by the threshold ($N^*$) under which population will collapse.
Fig. B2 Sensitivity analyses for the number of traps ($T$) and standard deviation of emergence ($\sigma$) in mass-trapping (MT). A: type -L (Lepidopteran pests), B: type -C (Coleopteran pests). Eradication effects are evaluated by the threshold ($N^*$) under which population will collapse.

**Fig. B2 SD emergence ($\sigma$)**

A) type -L

B) type -C
Fig. B3 Sensitivity analyses for the number of traps ($T$) and the number of eggs per day ($r$) in mass-trapping (MT). A: type -L (Lepidopteran pests), B: type -C (Coleopteran pests). Eradication effects are evaluated by the threshold ($N^*$) under which the population will collapse.
With mating-disruption

Fig. B4 Sensitivity analyses for the number of lures ($T$) and survival rate per day ($\Lambda$) in mating-disruption (MD) programs. A: type -L (Lepidopteran pests, the small window shows the entire range of results), B: type -C (Coleopteran pests). Controlling effects are evaluated by the threshold ($N^*$) under which populations decline.

Fig. B4 survival rate per day ($\Lambda$)
Fig. B5 Sensitivity analyses for the number of lures ($T$) and standard deviation of emergence ($\sigma$) in mating-disruption (MD) programs. A: type -L (Lepidopteran pests, the small window shows the entire range of results), B: type -C (Coleopteran pests). Controlling effects are evaluated by the threshold ($N^*$) under which populations decline.
Fig. B6 Sensitivity analyses for the number of lures ($T$) and the number of eggs per day ($r$) in mating-disruption (MD) programs. A: type -L (Lepidopteran pests, the small window shows the entire range of results), B: type -C (Coleopteran pests).

Controlling effects are evaluated by the threshold ($N^*$) under which populations decline.
With sterile insect release

Fig. B7 Sensitivity analyses for the number of sterile males inoculated ($S_{\text{input},a}$) and survival rate per day ($\Lambda$) in SIR. A: type -L (Lepidopteran pests, the small window shows the entire range of results), B: type -C (Coleopteran pests). Eradication effectiveness is evaluated by the threshold ($N^*$) under which populations collapse.
Fig. B8 Sensitivity analyses for the number of sterile males inoculated ($S_{\text{input}, d}$) and standard deviation of emergence ($\sigma$) in SIR. A: type -L (Lepidopteran pests, the small window shows the entire range of results), B: type -C (Coleopteran pests). Eradication effectiveness is evaluated by the threshold ($N^*$) under which populations collapse.

**Fig. B8 SD emergence ($\sigma$)**

A) type -L

<table>
<thead>
<tr>
<th>Number of sterile males ($S_{\text{input}, d}$)</th>
<th>Allee threshold ($N$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10,000</td>
<td>20,000</td>
</tr>
<tr>
<td>20,000</td>
<td>40,000</td>
</tr>
</tbody>
</table>

- $\sigma = 2.0$
- $\sigma = 4.0$
- $\sigma = 8.0$

B) type -C

<table>
<thead>
<tr>
<th>Number of sterile males ($S_{\text{input}, d}$)</th>
<th>Allee threshold ($N$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10,000</td>
<td>20,000</td>
</tr>
<tr>
<td>20,000</td>
<td>40,000</td>
</tr>
</tbody>
</table>

- $\sigma = 6.0$
- $\sigma = 12.0$
- $\sigma = 18.0$
Fig. B9 Sensitivity analyses for the number of sterile males inoculated ($S_{\text{input, } d}$) and the number of eggs per day ($r$) in SIR. A: type -L (Lepidopteran pests, the small window shows the entire range of results), B: type -C (Coleopteran pests). Eradication effectiveness is evaluated by the threshold ($N^*$) under which populations collapse.