

1Table S1. Theoretical models comparing at least two strategies for delaying the evolution of resistance to two or more pesticides or 2drugs. C = *Combination*, PA = *Periodic application*, M = *Mosaic* and RA = *Responsive alternation*.

Pesticide or drug	Reference	Strategies compared	Relative efficacy for delaying resistance
Insecticides	[1]	C ^a , PA, RA	C > PA > RA
	[2]	C, M, RA	C > M > RA
	[3]	C, PA, RA	C > PA = RA
	[4]	C ^a , PA	C > PA
	[5]	C, PA, M	C > PA > M
	[6]	C, RA	C > RA
	[7]	PA, M, RA	PA = M = RA
	[8]	C, PA, M	C > PA > M
	[9]	C, RA	conditional ^b
<i>Bacillus thuringiensis</i> toxins	[10]	C ^a , PA, M, RA	conditional ^b for C but PA = M > RA
	[11]	C, PA	C > PA
	[12]	C, RA	C ≥ RA

Herbicides	[13]	C, PA, RA	$C > PA = RA$
	[14]	C, PA	$C > PA$
	[15]	C, PA, RA	$C > PA > RA$
Antibiotics	[16]	PA, M	$M \geq PA$
	[17]	C, PA, M	$C > M \geq PA$
	[18]	C, RA	$C > RA$
	[19]	PA, M	$M > PA$
	[20]	PA, M	conditional ^b
Other	[21]	C, PA, M	$C > M \geq PA$
	[22]	C, PA	$C > PA$
pesticides	[23]	C, PA, RA	$C > PA = RA$
	[24]	C, PA, M	$PA = M > C$
or drugs	[25]	C, RA	$C > RA$
	[26]	PA, M	$M \geq PA$
Unspecifie	[27]	C, RA	conditional ^b
	[28]	C, RA	$C \geq RA$
d			
pesticides	[29]	C, PA	$C \geq PA$
or drugs			

3^a *Combination* is considered as a *half-dose Combination* of the pesticides or drugs; *full-dose*

4*Combination* is compared with *half-dose Combination* in [10].

5^b The ranking of the strategies depends on the setting for one or several input or output parameters.

Table S2. Empirical studies comparing at least two strategies for delaying the evolution of resistance to two or more pesticides or drugs. C = Combination, PA = Periodic application, M = Mosaic and RA = Responsive alternation.

Pesticide or drug	Reference	Strategies compared	Relative efficacy for delaying resistance	Type of study	Species	Pitfalls ^c		Specific settings ^d	
						PE	IC	HF	AR
Insecticide						√	√	√	√
s	[30]	C, PA, RA	C = PA > RA	Laboratory	<i>Blatella germanica</i>				
	[31]	C ^a , PA, RA	C = PA = RA	Field	<i>Bemisia tabaci</i>	√	√	√	
					<i>Culex</i>	√	√	√	
	[32]	PA, RA	PA > RA	Laboratory	<i>quinquefasciatus</i>				
	[33]	C ^a , PA, RA	PA > C > RA	Field	<i>Scirtothrips citri</i>	√	√	√	√
	[34]	C, PA, RA	C > PA > RA	Laboratory	<i>Musca domestica</i>	√	√	√	√
	[35]	PA, RA	PA > RA	Field	<i>Musca domestica</i>	√	√	√	
	[36]	C, PA, RA	C = PA > RA	Laboratory	<i>Haematobia irritans</i>	√	√	√	√

	[37]	M, RA	M > RA	Laboratory	<i>Musca domestica</i>		√	√	
	[38]	C, PA, RA	C = PA = RA	Laboratory	<i>Musca domestica</i>	√	√	√	√
	[39]	C, PA, RA	C = PA > RA	Laboratory	<i>Bemisia argentifolii</i>	√	√	√	√
<i>Bacillus</i>				Greenhouse				√	
<i>thuringien</i>	[40]	PA, M	PA > M	e	<i>Plutella xylostella</i>				
<i>sis toxins</i>				Greenhouse		√	√		
	[41]	C, RA, M	C > RA > M	e	<i>Plutella xylostella</i>				
	[42]	C, RA	C > RA	Laboratory	<i>Plodia interpunctella</i>	√	√	√	√
					<i>Culex</i>	√	√		√
	[43]	C, RA	C > RA	Laboratory	<i>quinquefasciatus</i>				
Herbicides	[44]	C, PA	C > PA	Field	<i>Thlaspi arvense</i>			√	√
					<i>Pseudomonas</i>	√		√	
Antibiotics	[45]	PA, M	PA > M	ICU ^b	<i>aeruginosa</i>				
					<i>Acinetobacter</i>	√	√	√	
	[46]	PA, M	M > PA	ICU ^b	<i>baumannii</i>				

8^a *Combination* is considered as a *half-dose Combination* of the pesticides or drugs.

9^b Intensive care unit.

10^c Pitfalls: PE = problems in experimental design (lack of replicates, no randomization, confounding factors etc.) and IC = incorrect

11 comparisons.

12^d Specific settings: HF = high frequencies of resistance before selection and AR = absence of refuges when testing *Combination*.

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