Table S1. Summary of probes (sensors installed into traps) used to automatically detect flying insects in the field. Sensor type describes the sensor used in the experiment; Trap type: the used type of trap; Target species; Capturing insect: the method which way they capture the given target taxa; Species selectivity: how do they gain species specificity; Publication

Abbreviations: IR: infrared

Sensor type	Trap type	Target species	Capturing insects	Species selectivity	Publication
Opto-electronic sensors					
Double-counting IR sensor	trapping tube placed in a bottle	*Bactrocera dorsalis*	insects cross alive	pheromone	Jiang, et al. [13], Okuyama, et al. [52]
IR interrupter controller, MSP-based sensing device and WSN-based monitoring station, two infrared gates	trapping tube placed in a bottle	*Bactrocera dorsalis*	living insects, (crawling through, the sensor)	pheromone	Jiang, et al. [25], Chuang and Jiang [53]
IR sensors	bucket trap	*Bactrocera dorsalis*, *Cydia pomonella*	insects fall through the sensor	pheromone	Holguin, et al. [14]
double counting IR sensor set	C-DAIS pheromone insect-trapping device	*Spodoptera litura*	insects fall through the sensor	pheromone	Shieh, et al. [26]
IR sensor	cylindrical plastic trap	*Ceratitis capitate*	dead or stunned	pheromone	Goldshtein, et al. [54]

infrared camera	polypropylene food containers with sticky card	*Grapholita molesta*	stuck insects	pheromone or live female	Pérez Aparicio, et al. [44]
IR sensor	cone type trap	*Grapholita molesta*	insects fall through the sensor	pheromone	Kim, et al. [17]
Laser-radar (lidar) system					
lidar	no trap	atmospheric insect fauna	no	not, only for quantitative measurement	Brydegaard, et al. [55]
continuous-wave Scheimpflug lidar system	no trap	rice field insects (12 species)	no	not, only for quantitative measurement	Song, et al. [56]
Passive kHz lidar	no trap	aerofauna	free flying insects	for monitoring abundances and fluxes of pests and disease vectors in the atmosphere	Jansson and Brydegaard [57]
lidar	UV light trap	flying insects	free flying insects	for quantifying flying insect abundance; distinguish three insect clusters based on morphology	Kirkeby, et al. [58]
Acoustic, Opto-acoustic sensors					
bimodal optoelectronic sensor based on stereo recording device	McPhail trap	fruit flies	insects flying trough	spectrum of the wingbeat	Potamitis, et al. [8]

acoustic piezoelectric counter	modified milk carton trap	*Lymantria dispar*	insects flying in	pheromone	Tobin, et al. [59]
microphone, camcorder	Jackson trap	*Ceratitis capitata*	free flying insects	wingbeat frequency	Mankin, et al. [7]
radio signal	electric insect trap with pheromone, not fluorescent light	*Plutella xylostella*	insects flying into to the trap	pheromone	Hirafuji, et al. [60]
Audio sensors					
camera	sticky trap	whitefly, trips and aphid	stuck insects	quantitative measurement	Rustia,et al. [10]
camera	sticky trap	lacewings, diabrotica, whitefly, thrips and aphid	stuck insects	machine vision technique	Solis-Sánchez, et al. [61]
camera	modified McPhail trap	*Bactrocera oleae*	dead insects in the liquid	non specific ammonium sulphate	Doitsidis, et al. [62]
mobile phone camera	sticky pheromone trap (modified Promotrap)	*Cydia pomonella*	stuck insects	pheromone	Guarnieri, et al. [63]
camera	sticky trap	*Aonidiella aurantii*	stuck insects	pheromone	Frewin, et al. [9]
camera	mobile robot car	*Pyralidae*	insects on the vegetation	image analysis (inverse histogram mapping)	Liu, et al. [64]
camera	red coloured Rebell® sticky traps	*Drosophila suzukii*	stuck insects	captive animals, experts + neural network	Roosjen, et al. [12]

digital camera	adhesive liner	*Cydia pomonella*	stuck insects	pheromone	Ding and Taylor [65]
camera	iMETOS iSCOUT® pheromone model	*Grapholita molesta*	stuck insects	pheromone	Ascolese, et al.[51]
camera	PESSL iMETOS iSCOUT® FruitFly model	*Bactrocera dorsalis*	stuck insects	torula yeast	Ascolese, et al.[51]
camera	Trapview Standard model (delta trap)	*Grapholita molesta*	stuck insects	pheromone	Ascolese, et al.[51]
camera	Trapview Self-Cleaning model	*Bactrocera dorsalis*	stuck insects	methyl-eugenol	Ascolese, et al.[51]
camera	Trapview Fly model (cylindrical trap)	*Bactrocera dorsalis*	stuck insects	torula yeast and methyl-eugenol	Ascolese, et al.[51]
camera	sticky sheet	*Resseliella theobaldi*	stuck insect	pheromone	Sipos, et al. [66]
camera	sticky cards	*Drospohila suzukii*	stuck insect	apple cider vinegar or non	Geissmann, et al. [67]
camera	delta trap	*Lobesia botrana*	stuck insect	pheromone	Ünlü, et al. [50]
camera	Trapview	*Cydia pomonella*	stuck insect	five-component sex pheromone-kairomone blend	Preti, et al. [68], Preti, et al. [40]
camera	delta trap	*Cydia pomonella*	stuck insect	pheromone	Schrader, et al. [69]

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