

## SUMMARY OF OPTIMAL TEMPERATURES (°C) AND ENVIRONMENTAL CONDITIONS FOR BIOLOGICAL CONTROL AGENTS

**Please note:** the data included here are drawn from a range of published sources, including laboratory-based studies. Most biological control agents will function at temperatures somewhat below and/or above their optima, but not at the same level of performance.

Target Pest Group	Biological control agent	Optimal Temperature Range (°C)	Additional notes on environmental factors affecting performance (RH=Relative Humidity)
APHIDS	<i>Aphidius colemani</i>	18–25	Active at 16–29 °C RH: 60–80%
	<i>Aphidius ervi</i>	18–25	Active at 16–29 °C RH: 60–80%
	<i>Aphelinus abdominalis</i>	21–25	RH: 60–80% (Tolerates a fairly wide range of humidities)
	<i>Chrysoperla rufilabris</i>	20–25	Active at 16–30 °C Optimal RH: at least 75% (Performance impaired below 55% RH)
	<i>Aphidoletes aphidimyza</i>	20–26	RH: at least 70% (Pupae are sensitive to low humidity)
THRIPS	<i>Orius insidiosus</i>	24–28 [approx.]	RH: 60% [approx.]. Note: there is an interaction between temperature, daylength & reproductive diapause (see section on <i>Orius insidiosus</i> in the Thrips Control page under the Product Selection tab)
	<i>Neoseiulus cucumeris</i>	20–25	RH: 65–75% (Immature stages are increasingly sensitive to low humidity at 30 °C and above)
	<i>Iphiseius degenerans</i> (= <i>Amblyseius degenerans</i> )	25+	More tolerant of low humidity than are most predatory mites
WHITEFLIES	<i>Encarsia formosa</i>	20–28	Activity is reduced at low light intensity & temperatures below 18 °C
	<i>Eretmocerus eremicus</i>	25–30	Tolerates higher temperatures (just above 30 °C) slightly better than does <i>E. formosa</i>
	<i>Delphastus catalinae</i>	25–28	Optimal RH: approx. 75–85% (Survival of immatures reduced at RH below 50%)
	<i>Amblyseius swirskii</i>	25–32	At least 60–70% RH.
FUNGUS GNATS	<i>Stratiolaelaps scimitus</i> (= <i>Hypoaspis miles</i> )	20–28 [approx.]	Activity in the soil is reduced at soil temperatures below 15 °C
	<i>Dalotia coriaria</i>	20–25	Survival of immatures reduced at 32 °C and above
	<i>Steinernema carpocapsae</i>	15–24 [Soil temp./approx.]	Soil temperatures should not exceed 31 °C for at least 24 hr after application
	<i>Steinernema feltiae</i>	14–22 [Soil temp./approx.]	Remains infective at soil temperature of 10 °C. More tolerant of cooler soils than is <i>S. carpocapsae</i>
MOTH LARVAE	<i>Podisus maculiventris</i>	25–30	
	<i>Trichogramma</i> spp.	25–30	60–80% RH
LEAF-MINERS	<i>Diglyphus isaea</i>	25–33	Fastest development at 30 °C and slightly above. Tolerates a wide range of humidity