

Review Article

REGULATION OF INSECTS DIAPAUSE : A REVIEW

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ABSTRACT : Diapause, a period of arrest of growth and development enables insects to overcome and survive the unfavourable environmental conditions. Environmental and hormonal regulation of diapause have been well defined, but our understanding of the molecular regulation of diapauses remains in its early stages . many genes are shut down during diapause, others exhibit specific expression at this time. Categories of diapause-upregulated genes can be distinguished based on their expression patterns and others are expressed only in early diapauses or late diapause. The termination of diapause is also accompanied by a rapid decline in expression of the diapause-upregulated genes and conversely, an elevation in expression of many genes that were downregulated during diapause. A comparison of insect diapause with other forms of living organism suggests that upregulation of a subset of heat shock protein genes are responsible for different types of dormancies. The maintenance phase is characterized by continuing developmental arrest and a relatively low and high metabolic rate, despite the fact that environmental conditions are still favourable for physiological and morphogenetic processes.

Key words : Diapause, insect.