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## Global change effects on plant-insect interactions: the role of phytochemistry

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### Abstract

Natural and managed ecosystems are undergoing rapid environmental change due to a growing human population and associated increases in industrial and agricultural activity. Global environmental change directly and indirectly impacts insect herbivores and pollinators. In this review, we highlight recent research examining how environmental change factors affect plant chemistry and, in turn, ecological interactions among plants, herbivores, and pollinators. Recent studies reveal the complex nature of understanding global change effects on plant secondary metabolites and plant-insect interactions. Nonetheless, these studies indicate that phytochemistry mediates insect responses to environmental change. Future research on the chemical ecology of plant-insect interactions will provide critical insight into the ecological effects of climate change and other anthropogenic disturbances. We recommend greater attention to investigations examining interactive effects of multiple environmental change factors in addition to chemically mediated plant-pollinator interactions, given limited research in these areas.

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