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Glucosinolates; Summary; 3.1 Introduction; 3.2 Nature and occurrence; 3.3 Biosynthesis; 3.3.1 Amino acid modification; 3.3.2 Conversion of amino acids; 3.3.3 Secondary transformations; 3.4 Hydrolysis; 3.4.1 Myrosinase; 3.4.2 Hydrolysis products; 3.5 Analytical methods; 3.5.1 Total glucosinolates; 3.5.2 Individual glucosinolates; 3.5.3 Breakdown products; 3.6 Biological effects 3.6.1 Anticarcinogenicity 3.6.2 Toxicity; 3.7 Taste versus health; 3.8 Responses to stress factors; 3.9 Effects of processing; Conclusions; References; 4 Phycotoxins in Seafood; Summary; 4.1 Introduction; 4.2 Causative and vector organisms; 4.3 Classification of phycotoxins; 4.4 The saxitoxin (STX) group (PSP); 4.4.1 The toxins causing PSP: the saxitoxin family; 4.4.2 Toxic effects; 4.5 The okadaic acid (OA) group (DSP); 4.5.1 The toxins causing DSP: okadaic acid and the dinophysistoxins; 4.5.2 Toxic effects; 4.6 The domoic acid (DA) group (ASP) 4.6.1 The toxins causing ASP (DAP): domoic acid and its isomers 4.6.2 Toxic effects; 4.7 The azaspiracid (AZA) group (AZP); 4.7.1 The toxins causing AZP: the azaspiracids; 4.7.2 Toxic effects; 4.8 The brevetoxin (BTX) group (NSP); 4.8.1 The toxins causing NSP: the brevetoxins; 4.8.2 Toxic effects; 4.9 The ciguatera toxin (CTX) group (CFP); 4.9.1 The toxins causing CFP; 4.9.2 Toxic effects of CTXs; 4.10 Other phycotoxins; 4.10.1 The pectenotoxin group; 4.10.2 The yessotoxin group; 4.10.3 The cyclic imine group; 4.10.4 The cyanobacterial toxins; 4.10.5 Miscellaneous phycotoxins 4.11 Detection of phycotoxins in seafood and algae 4.11.1 Assays and analyses; 4.11.2 Mammalian bioassays; 4.11.3 Instrumental (physico-chemical) analysis; 4.11.4 In vitro assays; 4.12 Depuration of phycotoxins; 4.12.1 Natural depuration; 4.12.2 Studies on cooking as a method of depuration; 4.12.3 The effects of freezing and chilling; 4.13 Monitoring and regulation; 4.13.1 Phytoplankton monitoring; 4.13.2 Monitoring of shellfish tissues for toxicity; 4.13.3 Risk analysis; 4.14 Future prospects; 4.15 A note on the IOC harmful algal bloom programme; Acknowledgements; References

## 5 Mushroom Toxins

### Sommario/riassunto

Inherent toxicants and processing contaminants are both non-essential, bioactive substances whose levels in foods can be difficult to control. This volume covers both types of compound for the first time, examining their beneficial as well as their undesirable effects in the human diet. Chapters have been written as individually comprehensive reviews, and topics have been selected to illustrate recent scientific advances in understanding of the occurrence and mechanism of formation, exposure/risk assessment and developments in the underpinning analytical methodology. A wide range of contaminan