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Chemical Ecology of Asian Long Horned Beetle ( ) - A Review

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ABSTRACT

Anoplophora glabripennis

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Anoplophora glabripennis

Monochamus alternates

INTRODUCTION

T *glabripennis* *Anoplophora*

et al ;

Acer

Populus *Salix*

A. glabripennis

A. glabripennis *et al*

LIFE CYCLE

et al.

A. glabripennis *et al*

et al

rd

et al

BIOLOGICAL CHARACTERISTICS

ECOLOGY

et al ; *et al*

s *Oemona hirta*

et al *A. malasiaca*

et al ;

A. glabripennis

et

al

;

et al ; *et al*

CHEMICAL ECOLOGY

et al

Attractants

Tr v *et al*

;

T e I

Floral volatiles

T

;

; ; i *et al.* ;

et al

;

i

V der

V der ;

I *et al.*

Anaglyptus subfasciatus

Demonax transilis

A. subfascia tus

D. transilis

A. sub5100470051004700.2 Td005F0040056001

Category and species affected	Stimulus	Behavioral activity	References
Floral volatiles			
Anaglyptus subfasciatus, Demonax transilis		*subfascia* *D. transilis*.	*et al*
A. subfasciatus, *D. transilis*			*et al*
A. subfasciatus			*et al*
A. subfasciatus			*et al*
Monochamus sutor			
Monochamus scutellatus, Monochamus notatus, Monochamus mutator *, Asemum atrum, Xylotrechus sagittatus* *, Xylotrechus undulatus, Tetropium cinnamopterum* *Acmaeops proteus* *Acanthocinus pusillus* *Rhagium inquisitor, Arhopalus agrestis* *Anoplodera chrysocoma, Anoplodera canadensis* *Callidium violaceum* *Neoclytus muricatulus* *Astylopsis sexguttata* *Pogonocherus mixtus*			

A. subfasciatus

A.
subfasciatus *et*
al
W
; *et al* ; *et al*

A. subfasciatus
et al.

A. subfasciatus
et al.
et al.

e.g

Smoke volatiles

et al. ;

v

T

Arhopalus tristis

et al ; *et al* ; *et al*

Pinus radiata

P. radiata
A. tristis *et al* ;
et al
et al

Pinus
sylvestris
Melanophila acuminata
et al

Repellents and deterrents

et al
; ; *et al* ; *et al*
; ; *et al*

Eucalyptus citriodora *Eucalyptus globulus*
Apriona germari
Psacothea hilaris, *Monochamus alternatus.*

et al ; *et al*
M. scutellatus *M. clamator* ew *et*
al

Arhopalus tristis
et al

A. tristis
et al *et al*
Pinus
pinaster *Olea europeae*

P. semipunctata

M. alternatus *Pinus*
densifora
M. alternatus
et al ; Y *et*
al.

HABITAT

; *et al*
A. glabripennis
Acer *Populus*

et al ; *et al*

A. glabripennis

Acer

Anoplophora

et al

DISPERSAL

A. glabripennis *A. nobilis*
Apriona germari *Xylotrechus*
rusticus

A. glabripennis

et al

A. glabripennis *A. chinensis*
et al ;

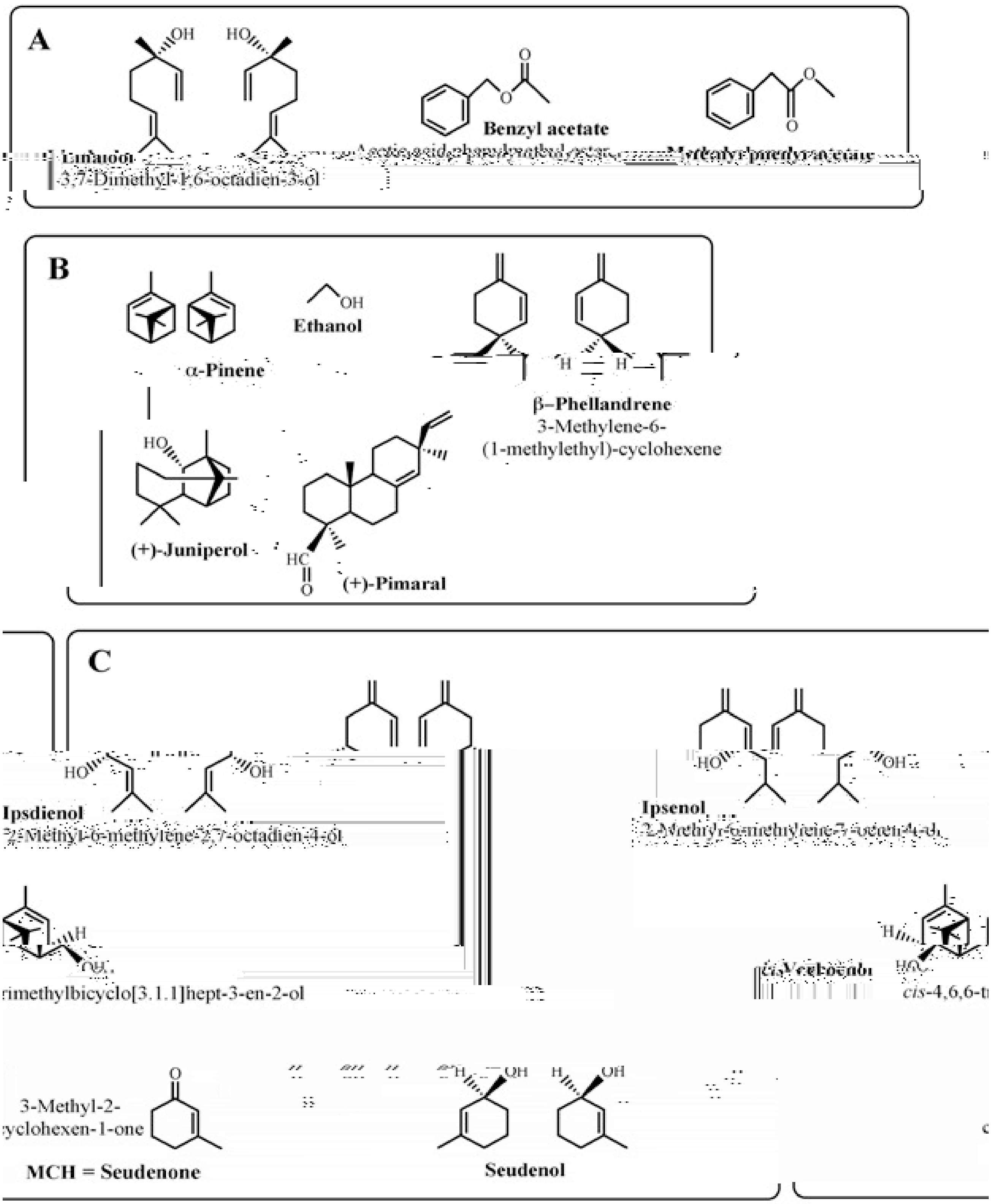
REPRODUCTION

et al ; *et al* ; *et al*

et al ;
et al

ERADICATION

e.g.
A. glabripennis *A. chinensis*


A
Benzyl acetate
3,7-Dimethyl-1,6-octadien-3-ol
B
Ethanol
α-Pinene
β−Phellandrene
3-Methylene-6-
(1-methylethyl)-cyclohexene
(+)-Juniperol
(+)-Pimaral
C
Ipsdienol
Ipsenol
rimethylbicyclo[3.1.1]hept-3-en-2-ol
3-Methyl-2-
MCH = Seudenone
Seudenol

e.g. A. glabripennis *A. chinensis*
et al ;

et al ; *et al* ; *et al*

POSSIBLE OUTCOME FROM INFESTATION

A. glabripennis

et al ; *et al*

DESCRIPTION

et al ; *et al*

DAMAGE

et al.

et al

ECONOMIC AND ENVIRONMENTAL IMPACTS

et al

MANAGEMENT

et al
; *et al*

CONTROL MEASURES

et al ; ;
et al ; *et al*

CONCLUSION AND RECOMMENDATIONS

1. *Intensifed monitoring work on ALB:*

2. *Quarantine actions:*

3. *IPM with stress on avoidance:*

4. *Host knowledge of plant diversity:*

5. *Erect understanding of the benefted trap trees:*

6. *Biological control:* *Scleroderma guani* *Dastarcus helophorides*

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Phoracantha semipunctata *J. chem. Ecol.,* **26**

Anoplophora glabripennis
J. Beijing Forest. Univ., **21**

Experientia, **48**

Pinus radiata *N. Z. Forest.,*
43

Vadonia livida
35

Scleroderma guani
Chin. Med. Plant., **26**

BioRisk **4**

BioRisk **4**

Experientia **48**

Ent.
Fenn **6**

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Solidago
Cyllene robinae. *Kentucky Agric. Exp. Stat. Bull.,* **231**
Integrated pest management of poplar fast-growing and high-yielding plantations

Apriona germari
Scien. Silv. Sin., **30**

Fores. Res., **7**

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Ent. exp. Appl **92**

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. Psyche, **22**

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Plumeria *Plumeria*
rubra *acutifolia*
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Smilax herbacea
). Rhodora, **100**

J. chem.
Ecol., **18**

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Beauveria bassiana
B. brongniartii. *J. Northw. Forest. Univ.,* **14**

Anoplophora

J. Beijing Forest. Univ., **21**

Anoplophora nobilis
A. glabripennis *J. Nanjing Forest. Univ.,* **23**

Anoplophora grabripennis
J. Inn. Mongolia Inst. Agric. Anim. Husb. **15**

Monochamus alternatus *M. carolinensis*

Environ. Ent., **27**

Anoplophora glabripennis
Acta Agric., **10**

Nosema glabripennis

Anoplophora glabripennis *Scient. Silv. Sin.,* **39**

Anoplophora nobilis. *Pl. Quaran.,* **18**

J. Ningxia Agric. Coll., **1**

Shanxi Forest. Sci. Tech., **4**

Anoplophora nobilis
J. Northw. Forest. Univ., **7**