

**2008 HSC Notes from
the Marking Centre
Primary Industries**

© 2009 Copyright Board of Studies NSW for and on behalf of the Crown in right of the State of New South Wales.

This document contains Material prepared by the Board of Studies NSW for and on behalf of the State of New South Wales. The Material is protected by Crown copyright.

All rights reserved. No part of the Material may be reproduced in Australia or in any other country by any process, electronic or otherwise, in any material form or transmitted to any other person or stored electronically in any form without the prior written permission of the Board of Studies NSW, except as permitted by the *Copyright Act 1968*. School students in NSW and teachers in schools in NSW may copy reasonable portions of the Material for the purposes of bona fide research or study.

When you access the Material you agree:

- to use the Material for information purposes only
- to reproduce a single copy for personal bona fide study use only and not to reproduce any major extract or the entire Material without the prior permission of the Board of Studies NSW
- to acknowledge that the Material is provided by the Board of Studies NSW
- not to make any charge for providing the Material or any part of the Material to another person or in any way make commercial use of the Material without the prior written consent of the Board of Studies NSW and payment of the appropriate copyright fee
- to include this copyright notice in any copy made
- not to modify the Material or any part of the Material without the express prior written permission of the Board of Studies NSW.

The Material may contain third-party copyright materials such as photos, diagrams, quotations, cartoons and artworks. These materials are protected by Australian and international copyright laws and may not be reproduced or transmitted in any format without the copyright owner's specific permission. Unauthorised reproduction, transmission or commercial use of such copyright materials may result in prosecution.

The Board of Studies has made all reasonable attempts to locate owners of third-party copyright material and invites anyone from whom permission has not been sought to contact the Copyright Officer, ph (02) 9367 8289, fax (02) 9279 1482.

Published by Board of Studies NSW
GPO Box 5300
Sydney 2001
Australia

Tel: (02) 9367 8111
Fax: (02) 9367 8484
Internet: www.boardofstudies.nsw.edu.au

2009027

Contents

Introduction 4
Section I..... 5
Section II 5
Section III..... 6

2008 NOTES FROM THE MARKING CENTRE

PRIMARY INDUSTRIES

Introduction

This document has been produced for the teachers and candidates of the Stage 6 course in Primary Industries. It contains comments on candidate responses to the 2008 Higher School Certificate examination, indicating the quality of the responses and highlighting their relative strengths and weaknesses.

This document should be read along with the relevant syllabus, the 2008 Higher School Certificate examination, the marking guidelines and other support documents which have been developed by the Board of Studies to assist in the teaching and learning of Primary Industries.

General comments

In 2008, approximately 530 candidates presented for the Higher School Certificate examination in this subject.

In general, the candidates' knowledge and understanding of the content of this syllabus was good.

The quality of answers indicated that the candidates had a high level of knowledge and understanding of some topic areas, particularly OHS, use of PPE, technology, weeds and the use of chemicals.

Candidates need to be familiar with the Board's Glossary of Key Words (www.boardofstudies.nsw.edu.au/syllabus_hsc/glossary_keywords.html) which contains some terms commonly used in examination questions. However, candidates should also be aware that not all questions will start with or contain one of the key words from the glossary. Questions such as 'how?', 'why?' or 'to what extent?' may be asked or verbs which are not included in the glossary may be used, such as 'design', 'translate' or 'list'.

Section I

Question	Correct response
1	D
2	A
3	A
4	A
5	C
6	B
7	A
8	B
9	C
10	A
11	B
12	D
13	B
14	C
15	D

Section II

Question 16

- (a) Better responses stated more than one impact for both agricultural production and the environment. Weaker responses stated an action of the broadleaf weed but did not explain the impact this would have on the agricultural production or the environment.
- (b) Better responses provided a description of the potential risks for each of the control methods.

Question 17

- (a) Weaker responses did not correctly measure the length of the fence.
- (b) In the better responses, candidates correctly counted the number of stays and strainer posts from the diagram and calculated the correct number of star posts. These responses divided the length of the fence by 3 and then subtracted 8 (for the number of strainer posts).
- (c) The poorer responses did not calculate the costs of materials accurately.

Question 18

- (a) The better responses clearly listed three communication methods that were relevant to inform potential buyers of the clearing sale. Responses included newspaper, radio, television, flyers/posters and the internet.

Weaker responses listed details found in the advertisement rather than the mode of communication.

- (b) Better responses justified the choice of communication method, providing reasons to support their choice. For example radio was considered an effective communication method as it could reach a wide audience, people could listen to it while working in utes/tractors, it is cheap, could be played at appropriate times and be repeated many times throughout day.

Question 19

- (a) Better responses identified a potential hazard, described possible risks and appropriate control measures.
- (b) Better responses prioritised the actions correctly using precise terminology and relevant examples.

Weaker responses provided the wrong control actions such as the burn victims should have taken their burnt clothes off and placed constriction bandages on their bodies.

Section III

Candidates are required to answer two questions (out of three) from this section.

Question 20

Better responses organised information in a well-reasoned and cohesive manner, using precise industry terms. These responses provided implications of the technological change, for example the National Livestock Identification Scheme was discussed in terms of cost, labour and traceability. Better responses stated a number of relevant sources of information on technology, for example manufacturer, field days or newspaper. These responses then evaluated the source and made a judgement on the value of that source keeping them up to date.

Weaker responses did not provide implications relevant to their technological change and provided a general description of the technology. Weaker responses did not evaluate relevant sources and only provided a general list or basic description of the source.

Question 21

Better responses contained a description of the risks associated with the transportation, storage, preparation and use of dangerous pesticides as well as an evaluation of the different measures that could be used to control these risks.

Weaker responses identified several control measures when using pesticides rather than identifying the risks associated with the chemicals. The weaker responses displayed limited knowledge of the risks in transporting, storing, preparing and using dangerous chemicals. They described the control measures and then only implied some of the risks.

Question 22

Better responses evaluated a range of control measures for a named weed species. These responses explained how the control measure would be successful. Weaker responses did not quantify effectiveness and simply referred to the control measure as 'good' or 'not effective'. Better

responses recognised the impact(s) to the environment from the control measures and their importance to primary industries.

Responses containing poor economic reasoning failed to use descriptive terminology and referred to measures as 'cheap' or 'expensive'. Weaker responses outlined control measures however did not evaluate the strategies.

Primary Industries

2008 HSC Examination Mapping Grid

Question	Marks	Unit of competency / Element of competency
Section I		
1	1	RTC2704A Provide basic first aid
2	1	RTC2704A Provide basic first aid
3	1	RTC2706A Apply chemicals under supervision RTC2401A Treat weeds
4	1	RTC2706A Apply Chemicals under supervision
5	1	RTE2503A Observe and report on weather
6	1	RTC2701A Follow OHS procedures RTC2706A Apply chemicals under supervision
7	1	RTC2209A Install, maintain and repair fencing
8	1	RTC2401A Treat weeds
9	1	RTC2702A Observe environmental work practices
10	1	RTC2706A Apply chemicals under supervision RTC2702A Observe environmental work practices
11	1	RTC2705A Work effectively in industry
12	1	RTC2801A Participate in workplace communications
13	1	RTC2705A Work effectively in industry
14	1	RTC2701A Follow OHS procedures
15	1	RTC2701A Follow OHS Procedures
Section II		
16 (a)	3	RTC2401A Treat weeds, RTC2702A Observe environmental work practices
16 (b)	6	RTC2401A Treat weeds
17 (a)	1	RTC2209A Install, maintain and repair fencing
17 (b)	3	RTC2209A Install, maintain and repair fencing
17 (c)	5	RTC2209A Install, maintain and repair fencing
18 (a)	2	RTC2801A Participate in Workplace Communication
18 (b)	6	RTC2801A Participate in Workplace Communication
19 (a)	5	RTC2701A Follow OHS procedures, RTC20704A Provides basic first aid
19 (b)	4	RTC2704A Provide basic first aid, RTC2701A Follow OHS procedures
Section III		
20	15	RTC2705A Work effectively in the industry RTC2801A Participate in workplace communications
21	15	RTC2704A Provide basic first aid RTC2706A Apply chemicals under supervision
22	15	RTC2401A Treat weeds RTC2702A Observe environmental work practice



2008 HSC Primary Industries Marking Guidelines

The following marking guidelines were developed by the examination committee for the 2008 HSC examination in Primary Industries, and were used at the marking centre in marking student responses. For each question the marking guidelines are contained in a table showing the criteria associated with each mark or mark range. For some questions, 'Sample Answers' or 'Answers may include' sections are included. These are developed by the examination committee for two purposes. The committee does this:

- (1) as part of the development of the examination paper to ensure the questions will effectively assess students' knowledge and skills, and
- (2) in order to provide some advice to the Supervisor of Marking about the nature and scope of the responses expected of students.

The examination committee develops the marking guidelines concurrently with the examination paper. The 'Sample Answers' or similar advice are not intended to be exemplary or even complete answers or responses. As they are part of the examination committee's 'working document', they may contain typographical errors, omissions, or only some of the possible correct answers.

The information in the marking guidelines is further supplemented as required by the Supervisor of Marking and the senior markers at the marking centre.

A range of different organisations produce booklets of sample answers for HSC examinations, and other notes for students and teachers. The Board of Studies does not attest to the correctness or suitability of the answers, sample responses or explanations provided. Nevertheless, many students and teachers have found such publications to be useful in their preparation for the HSC examinations.

A copy of the Mapping Grid, which maps each question in the examination to units/elements of competency as detailed in the syllabus, is also included.

Section II

Question 16 (a)

Competencies assessed: RTC2702A, RTC2401A

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none">States THREE potential impacts of the broadleaf weed infestation on both agricultural production AND the environment	3
<ul style="list-style-type: none">States TWO potential impacts of the broadleaf weed infestation on both agricultural production and the environment OR <ul style="list-style-type: none">States TWO potential impacts of the broadleaf weed infestation on agricultural production OR the environment	2
<ul style="list-style-type: none">States ONE potential impact of the broadleaf weed infestation on agricultural production OR the environment	1

Answers could include:

- Reduced pasture production due to competition by the weed for water nutrient and light
- Spread of weed into national parks and downstream properties due to spread of weed seeds via water and potentially birds eating the fruit
- Contamination of wool
- Harboursing feral pests
- Infestation of national parks and the woodlot and vineyard
- Impact on biodiversity
- Stream bank erosion
- Increased cost of production

Question 16 (b)*Competencies assessed: RTC2401A***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Puts forward for consideration or action TWO different control strategies• Provides characteristics and features of a wide range of risk factors associated with the two control strategies related to agricultural production and the environment	5–6
<ul style="list-style-type: none">• Puts forward for consideration or action TWO control strategies• Describes a limited range of risk factors associated with the two control strategies related to both agricultural production and the environment	4
<ul style="list-style-type: none">• Describes TWO control strategies or provides a basic description of a limited range of risk factors associated with two control strategies	3
<ul style="list-style-type: none">• States TWO control strategies <p>OR</p> <ul style="list-style-type: none">• Lists TWO potential risks	2
<ul style="list-style-type: none">• States ONE control strategy or risk	1

Answers could include:**Control Method**

- chemical spraying would provide a quick and effective way of control
- mechanical control provides an environmentally friendly approach

Chemical control

- contamination of creeks
- spray drift onto target organisms
- bio accumulation in food chains

Mechanical Control

- disturbance of soil leading to possible erosion and destabilisation of creek banks need to control re-growth and germination of weed seeds in disturbed ground

The choice of preferred control method or methods would be dependant on the individual weed species as different weeds respond differently to a range of control methods

- Chemical spraying
- Mechanical removal
- Burning
- Biological–goats
- Over spraying
- Impact
- Non target species
- Residual

Question 17 (a)*Competencies assessed: RTC2209A***MARKING GUIDELINES**

Criteria	Marks
• Correctly calculates total length of fence in metres	1

Answers could include:

2450 metres

Question 17 (b)*Competencies assessed: RTC2209A***MARKING GUIDELINES**

Criteria	Marks
• Correctly calculates and shows appropriate working to determine the number of each type of post required • States correct number of strainer and diagonal posts	3
• Correctly calculates and shows working to determine the number of any TWO types of post required	2
• Correctly calculates number of ONE type of post required	1

Answers could include:

- Number of strainer posts needed = 8
- Number of diagonal stay posts needed = 7
- Number of steel posts needed = 808

Question 17 (c)
Competencies assessed: RTC2209A
MARKING GUIDELINES

Criteria	Marks
• Correctly calculates the total cost of fencing materials	5
• Correctly calculates the individual costs of all materials needed	4
• Correctly calculates any FOUR individual costs of materials needed	3
• Correctly calculates any THREE individual costs of materials needed	2
• Correctly calculates any TWO individual costs of materials needed	1

Answers could include:

Materials needed	Material cost	
Plain wire in 1500 metre rolls \$205 per roll	\$1435.00	7 rolls @ \$205/roll
Rabbit Netting wire in 100 metre rolls \$323 per roll	\$8075.00	25 rolls @ \$323/roll
Steel posts in bundles of 10 @ \$62 per bundle	\$5022.00	81 bundles @ \$62/bundle
Strainer posts at \$25 each	\$200.00	8 posts@ \$25
Diagonal stay posts at \$15 each	\$105.00	7 posts@ \$15
Cost of materials	\$14,837.00	
Plus 10% GST	\$1483.70	
TOTAL	\$16,320.70	

Question 18 (a)*Competencies assessed: RTC2801A***MARKING GUIDELINES**

Criteria	Marks
• Lists THREE relevant communication methods	2
• Lists TWO relevant communication methods	1

Answers could include:

- Word of mouth
- Newspaper
- Local radio
- Flyers
- Newspaper advertisement
- Telephone
- 2-way radio
- Electronic-email/website/e-bay/DVD/faxes
- Radio-local
- Letter drop
- Signs

Question 18 (b)*Competencies assessed: RTC2801A***MARKING GUIDELINES**

Criteria	Marks
• Lists TWO preferred communication methods and justifies BOTH communication methods in detail	5–6
• Lists ONE or TWO preferred communication methods with some explanation of choice	3–4
• Lists ONE or TWO communication methods and outlines method(s) of communication	1–2

Question 18 (b) (continued)*Answers could include:*

METHOD	JUSTIFICATION
Newspaper Advertisement	<ul style="list-style-type: none">• Widespread coverage• Known place for people to look (Land Newspaper)• Readily accessible by unskilled people in electronic media• Descriptive• Visual• Targeted audience• Might not be seen• Cost effective
Electronic	<ul style="list-style-type: none">• Ease of operation (email)• Cost effective• Fast delivery• Can be visual and audio• Updated easily• Widespread coverage (website/e-bay)• Have technical competence
Radio	<ul style="list-style-type: none">• Widespread coverage• Audio only• Accessible to large audience• Time effective (eg listening to radio whilst driving working etc)• Need to be listening to that particular station at that time• Expensive to advertise
Letter drop	<ul style="list-style-type: none">• Personalised• Ability to target certain potential clients• Time consuming
Signs	<ul style="list-style-type: none">• Time consuming• How do you target clients in certain location• May be fragile to weather events• Distractive when driving
2-way radio	<ul style="list-style-type: none">• Personalised• Limits audience• Time consuming• Limited range
Telephone	<ul style="list-style-type: none">• Personalised• Time consuming• Can be expensive (mobile)
TV	<ul style="list-style-type: none">• Expensive• Have to be on right channel at right time• Ability to target a wide audience

Question 19 (a)

Competencies assessed: RTC2704A, RTC2701A

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Correctly identifies the potential hazard • Sketches in general terms TWO possible risks • Provides features and characteristics of the appropriate control measures for the hazard 	5
<ul style="list-style-type: none"> • Correctly identifies the potential hazard • Outlines ONE possible risk • Describes appropriate control measures for the hazard OR <ul style="list-style-type: none"> • Correctly identifies the potential hazard • Outlines TWO possible risks • Describes an appropriate control measure for the hazard 	4
<ul style="list-style-type: none"> • Correctly identifies the potential hazard • Outlines ONE possible risk • Describes an appropriate control measure for the hazard OR <ul style="list-style-type: none"> • Correctly identifies the potential hazard • Outlines TWO possible risks OR <ul style="list-style-type: none"> • Describes appropriate control measures for the hazard 	3
<ul style="list-style-type: none"> • Correctly identifies the potential hazard • Names ONE possible risk OR <ul style="list-style-type: none"> • Correctly identifies the potential hazard • Names ONE control measure for the hazard 	2
<ul style="list-style-type: none"> • States that fire is a hazard OR <ul style="list-style-type: none"> • Names a risk OR <ul style="list-style-type: none"> • Names a control measure 	1

Question 19 (a) (continued)*Answers could include:*

Potential Hazard	Possible Risks	Appropriate Control Measures
Fire	<ul style="list-style-type: none">– Death– Injury through burns– Building collapse– Explosion– Production of toxic gases	<ul style="list-style-type: none">– Isolate the container from rest of workshop– Have fire extinguisher– Isolate container from potential ignition resources– Locate away from workshop– Place signage at entrance to workshop

Question 19 (b)*Competencies assessed: RTC2704A, RTC2701A***MARKING GUIDELINES**

Criteria	Marks
• Provides features and characteristics of a range of actions to be taken in response to a person with severe burns	4
• Outlines a range of actions to be taken in response to a person with severe burns	3
• Describes an action to be taken in response to a person with severe burns	2
• Outlines an action to be taken in response to a person with severe burns	1

Answers could include:

DRABCD

- Checks area for danger to self and others
- Ring 000
- Douse with water
- Remove from danger

Question 20*Competencies assessed: RTC2801, RTC2705A***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Demonstrates a thorough understanding and knowledge of the implications of technological change and of evaluating sources• Makes judgements about the value of a range of sources used to keep up to date• Provides well reasoned and cohesive response that includes precise industry terminology with detailed examples	13–15
<ul style="list-style-type: none">• Demonstrates a detailed understanding of the implications of a technological change and of evaluating sources• Outlines the implications of a technological change• Makes a judgement about the value of source(s) used to keep up to date• Provides a reasoned and cohesive response that includes correct terminology with industry examples	10–12
<ul style="list-style-type: none">• Demonstrates a sound understanding of technological change and/or sources of information• Describes sources that could be used to keep up to date• Provides a reasoned response that includes some industry terminology with examples	7–9
<ul style="list-style-type: none">• Demonstrates a general understanding of a technological change and sources of information for Primary Industries• Provides general response that includes basic industry terminology with some examples	4–6
<ul style="list-style-type: none">• Demonstrates a limited understanding of technological change or sources of information for Primary Industries• Uses limited industry terminology and examples	1–3

Answers could include:

Implications could include those associated with:

- Employment
- Industry environment
- Market conditions
- Productivity

Precision Agriculture

- GPS
- Controlled track farming
- Laser levelling
- Computerised spray rigs

Question 20 (continued)

Genetic Engineering

- Insect resistant plants, eg GM cotton – Ingard/Bollgard
- Herbicide resistant plants, eg Round-up ready canola
- Vit A gene in rice of Asia

Selective Breeding

- Poultry industry – high growth rate selectivity
- Sperm sexing in sheep and cattle
- AI/ET

Computer Control Systems – Irrigation

- Centre pivot controls
- Soil moisture probes
- Integrated water management systems

Computer Design Glasshouses – Glasshouses

- Ventilation systems – temperature and humidity controlled
- Heating systems – temperature control
- CO₂ generation – computers

Range of Sources

- Reference materials – industry journals, machinery journals, CSIRO journals, konindon group
- Library – local/state/national
- Internet research
- Suppliers
- Industry bodies
- Regulatory bodies
- Government – local/state/national
- Trade personnel/contractors/advisors

Evaluation could include comment on:

- Reliability of sources
- Accessibility
- Bias
- Technical credibility
- Currency
- Regional relevance

Question 21

Competencies assessed: RTC2706A, RTC2704A

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Demonstrates a thorough understanding and knowledge of the risks associated with and use of dangerous pesticides and measures to control the risks • Describes the risk associated with transport, storage, preparation and use of dangerous pesticides • Makes judgements about measures to control these risks • Provides a well reasoned and cohesive response that includes precise industry terminology with detailed examples 	13–15
<ul style="list-style-type: none"> • Demonstrates a detailed understanding of the risks associated with and use of dangerous pesticides • Outlines risks associated with transport, storage, preparation and use of dangerous pesticides • Makes a basic judgement about the control of the risk/risks • Provides a reasoned and cohesive response that includes correct industry terminology with industry examples 	10–12
<ul style="list-style-type: none"> • Demonstrates a sound understanding of the risks associated with the use of dangerous pesticides • Describes measures that could be used to control these risks • Provides a reasoned response that includes some industry terminology with examples 	7–9
<ul style="list-style-type: none"> • Demonstrates a general understanding of the risks associated with and use of dangerous pesticides • Provides a general response about control measures • Uses general industry terminology with some examples 	4–6
<ul style="list-style-type: none"> • Demonstrates a limited understanding of the risks associated with and use of dangerous pesticides • Uses limited terminology and examples 	1–3

Answers could include:

Transportation

- Spills
- Contamination of vehicle
- Inhalation of fumes by driver
- Contamination of environment
- Danger to public

Question 21 (continued)

Storage

- Spills
- Contamination of storage area
- Inhalation of fumes/contact with chemical
- Contamination of environment

Preparation

- Acute poisoning of operator by contact with concentrate
- Contact with vapours
- Inhalation
- Contamination of mixing area
- Contamination of environment
- Residue build up in mixing area
- Incompatibility

Use

- Correct use of PPE
- Spray drift
- Poisoning of applicator
- Effect on non target species

Question 22

Competencies assessed: RTC2702A, RTC2401A

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Demonstrates a thorough understanding and knowledge of a range of control methods for a named weed species • Addresses in depth effectiveness, economic feasibility and impact on the environment • Draws out and relates the implication of a control method • Provides a well reasoned and cohesive response that includes precise industry terminology with detailed examples 	13–15
<ul style="list-style-type: none"> • Demonstrates a detailed understanding of a range of control methods • Addresses the effectiveness, economic feasibility and impact on the environment • Provides a reasoned and cohesive response that includes correct industry terminology with industry examples 	10–12
<ul style="list-style-type: none"> • Demonstrates a sound understanding of a control methods • Comment on the effectiveness and OR economic feasibility and OR impact on the environment • Provides a general response that includes some industry terminology with examples 	7–9
<ul style="list-style-type: none"> • Demonstrates a general understanding of a control method • Provides a general response that includes general industry terminology with some examples 	4–6
<ul style="list-style-type: none"> • Demonstrates a limited understanding of a control method • Uses limited terminology and examples 	1–3

Question 22 (continued)***Answers could include:*****Mechanical control**

- Effective in small infestations
- Large infestation disturbs soil exposes area to erosion and potential re seeding and re-growth from remaining plant material
- Can allow access to the whole infestation and the growth points, does not carry the risk of chemical treatments which can impact on non target plants and animals especially when applied along water courses
- Can disturb weed seed bank in the ground

Chemical control

- Does not disturb soil and has the advantage of killing the whole plant as well as possible sterilisation of seeds
- May need follow up with perennial weed like blackberry
- Has the risks of spray drift to non target species and may contaminate water courses and the environment
- Spray drift can be controlled by use of correct application equipment and application environment
- Difficulty spraying infestations adjacent to water courses
- Broad spectrum sprays can kill non target pasture species like clovers
- Need to spray at correct time in the weeds life cycle
- Biological control using blackberry rust
- Will not eradicate weed will only weaken the plant
- Can be used in inaccessible areas and along creek lines
- Biological control using goats
- Will not eradicate weed but has the ability to control weed after other forms of control have been used in the initial stages
- Does not impact on the environment competing out useful pasture species
- Remove weed then plant the area with vigorous growing species to compete for light water and nutrient
- Will only work after initial control treatment like chemicals
- Recommended program should include implementation of control methods using IPM principles

Question 22 (continued)

Analysis may include the following:

Procedures for selecting treatment methods including:

- Correctly identifying the target
- Researching the products registered for the purpose
- Level of toxicity
- Environmental implications
- Access to appropriate application and safety equipment
- Disposal of unwanted chemicals and containers
- Residue or resistance problems

Control methods may include:

Cultural

- The use of tolerant or biological cultivars
- Choice of location
- Time of planting
- Fertilisers
- Plant rotation
- Sanitation

Mechanical

- Hoeing and chipping
- Soil tillage
- Slashing and cutting
- Chaining or scrubbing
- Ripping

Physical

- Hand weeding
- Drainage
- Temperature
- Light

Biological

- Disease-resistant varieties
- Using a natural predator
- Companion planting

Chemical

- Artificial chemicals
- Dust/sprays