



SOUTHERN

JUNE 2018

# GRDC™ GROWNOTES™



**GRDC™**

GRAINS RESEARCH  
& DEVELOPMENT  
CORPORATION

# VETCH

---

## CONTENTS

---

# Contents

## 1 Introduction

Key points .....	1
1.1 What is vetch? .....	2
<i>Key characteristics</i> .....	2
1.1.1 Hard seed.....	3
1.2 Why grow vetch? .....	4
1.2.1 Forage .....	4
1.2.2 Grain.....	5
1.2.3 Manure crop.....	6
1.2.4 Benefits of vetch in the rotation.....	7
1.2.5 Weed control and herbicide resistance management.....	7
1.2.6 Nitrogen fixation.....	7
1.2.7 Soil cover.....	7
1.2.8 Biology booster .....	7
1.3 Suitable environments .....	8
1.3.1 Productivity .....	8
1.3.2 Nitrogen returns .....	8
1.4 Markets.....	10
1.4.1 Stockfeed (ruminants).....	10
1.4.2 Stockfeed (monogastrics) .....	10
1.4.3 Seed .....	10
1.4.4 Hay.....	10

## 2 Planning

Key points.....	1
2.1 Variety choice .....	3
2.1.1 Common or grain vetch – <i>Vicia sativa</i> ssp. <i>sativa</i> .....	7
<i>Blanchefleur</i> .....	7
<i>Cummins</i> .....	7
<i>Languedoc</i> .....	7
<i>Morava</i> <sup>Ⓛ</sup> .....	7
<i>Rasina</i> <sup>Ⓛ</sup> .....	8
<i>Timok</i> <sup>Ⓛ</sup> .....	8
<i>Volga</i> <sup>Ⓛ</sup> .....	8
2.1.2 Purple Vetch – <i>Vicia benghalensis</i> ssp. <i>benghalensis</i> .....	9



<i>Benatas</i> .....	9
<i>Popany</i> .....	9
2.1.3 Woolly pod vetch .....	9
<i>Capello<sup>®</sup> and Haymaker<sup>®</sup> – Vicia villosa ssp. dasycarpa</i> .....	9
<i>Namoi</i> .....	10
<i>RM4<sup>®</sup> – Vicia villosa ssp. eriocarpa</i> .....	10
<b>2.2 Australian National Vetch Breeding Program</b> .....	<b>10</b>
<b>2.3 Place in rotation – considerations for future crops</b> .....	<b>10</b>
2.3.1 Disease .....	10
2.3.2 Weeds .....	12
2.3.3 Nitrogen fixation .....	13
2.3.4 Stubble cover .....	14
2.3.5 Soil moisture reserves .....	14
<b>2.4 Vetch benefits to cereal rotations</b> .....	<b>14</b>
<b>2.5 Paddock selection – considerations for a vetch crop</b> .....	<b>14</b>
2.5.1 Soil type .....	14
2.5.2 Herbicide residue .....	15
2.5.3 Sowing into cereal stubble .....	15
2.5.4 Disease .....	15
2.5.5 Insect pests.....	15
2.5.6 Cross-pollination .....	15
<b>3 Paddock preparation</b>	
Key points.....	1
<b>3.1 Soil preparation</b> .....	<b>2</b>
3.1.1 Soil pH .....	2
3.1.2 Hard setting and compaction .....	2
3.1.3 Non-wetting .....	2
<b>3.2 Stubble</b> .....	<b>3</b>
<b>3.3 Weed control</b> .....	<b>3</b>
3.3.1 Summer weed control .....	3
3.3.2 Removing the ‘green bridge’ .....	3
<b>3.4 Carryover pests</b> .....	<b>4</b>
<b>3.5 Carryover diseases</b> .....	<b>6</b>
<b>4 Seeding</b>	
Key points.....	1
<b>4.1 Time of sowing</b> .....	<b>2</b>
<b>4.2 Pre-seeding weed control</b> .....	<b>3</b>
<b>4.3 Seed quality</b> .....	<b>4</b>
<b>4.4 Seed inoculation and seed dressing</b> .....	<b>5</b>
<b>4.5 Seeding system – depth and row spacing</b> .....	<b>5</b>



4.5.1	Sowing depth .....	5
4.5.2	Row spacing .....	6
4.5.3	Wheel tracking .....	6
<b>4.6</b>	<b>Sowing rates.....</b>	<b>6</b>
4.6.1	Calculating seed rate .....	7
<b>4.7</b>	<b>Seeding fertiliser .....</b>	<b>7</b>
4.7.1	Phosphorus (P).....	7
4.7.2	Nitrogen (N) .....	8
4.7.3	Potassium (K).....	8
4.7.4	Sulfur (S) .....	8
4.7.5	Zinc (Zn).....	8
4.7.6	Copper (Cu) .....	8
4.7.7	Manganese (Mn).....	8
4.7.8	Molybdenum (Mo) .....	8
<b>4.8</b>	<b>Rolling.....</b>	<b>9</b>
<b>5</b>	<b>Growth stages</b>	
	Key points.....	1
<b>5.1</b>	<b>Introduction .....</b>	<b>2</b>
	<i>Growth stage</i> .....	3
	<i>Growth stage</i> .....	3
	<i>Growth stage</i> .....	4
	<i>Growth stage</i> .....	5
	<i>Growth stage</i> .....	6
	<i>Growth stage</i> .....	7
	<i>Growth stage</i> .....	7
<b>6</b>	<b>In-crop management</b>	
	– pests	
	Key points.....	1
6.1.1	Pest management .....	2
6.1.2	Beneficial and natural enemies.....	4
<b>7</b>	<b>In-crop management – disease</b>	
	Key points.....	1
<b>7.1</b>	<b>Disease management.....</b>	<b>2</b>
7.1.1	Ascochyta blight ( <i>Ascochyta fabae</i> ) .....	5
7.1.2	Chocolate spot and Botrytis grey mould ( <i>Botrytis fabae</i> and <i>B. cinerea</i> ) .....	5
7.1.3	Rust ( <i>Uromyces viciae-fabae</i> ).....	7
7.1.4	Root rots ( <i>Fusarium</i> , <i>Phoma</i> , <i>Rhizoctonia</i> and <i>Pythium</i> spp.).....	8
7.1.5	Sclerotinia stem rot ( <i>Sclerotinia sclerotiorum</i> and <i>S. trifoliorum</i> ).....	8
7.1.6	Stem nematode ( <i>Ditylenchus dipsaci</i> ).....	9
7.1.7	Viruses .....	9



## 8 In-crop management – weeds

Key points.....	1
8.1.1 Weed management in-crop.....	2
8.1.2 Effective weed control.....	3
8.1 Tolerance of vetch species to a range of herbicides.....	3
8.2 Herbicide mode of action .....	4
8.3 Avoiding herbicide damage .....	5
8.4 Herbicide damage effects in vetch .....	5
8.4.1 Group A .....	5
Description .....	5
Management .....	5
8.4.2 Group B.....	6
Description .....	6
Management .....	6
8.4.3 Group C .....	6
Description .....	6
Management.....	6
8.4.4 Group D .....	6
Description .....	6
Management.....	6
8.4.5 Group F.....	7
Description .....	7
Management.....	7
8.4.6 Group G .....	7
Description .....	7
Management.....	7
8.4.7 Group J .....	7
Description .....	7
Management.....	7
8.4.8 Group K.....	7
Description .....	7
Management.....	7
8.4.9 Group L .....	8
Description .....	8
Management .....	8
8.4.10 Group M.....	8
Description .....	8
Management .....	8

## 9 In-crop management – nutrition

Key points.....	1
9.1 Nutrition .....	2
9.1.1 Nodulation failure.....	2

FEEDBACK



*Description* ..... 2  
*Management*..... 2

**10 In-crop management – environmental impacts**

**Key points**..... 1  
**10.1 Moisture stress** ..... 2  
    10.1.1 Drought..... 2  
        *Management to minimise moisture stress*..... 2  
    10.1.2 Waterlogging ..... 2  
        *Management of waterlogging* ..... 2  
**10.2 Temperature** ..... 3  
    10.2.1 Heat ..... 3  
        *Management to minimise heat stress* ..... 3  
**10.3 Frost**..... 3  
    10.3.1 Managing frost..... 4  
**10.4 Hail and physical damage** ..... 4  
**10.5 Chemical leaf spotting**..... 5  
**10.6 Lack of sunlight**..... 5

**11 Late season management**

**Key points**..... 1  
**11.1 Forage** ..... 2  
    11.1.1 Timing of cutting..... 2  
    11.1.2 Vetch forage quality ..... 3  
    11.1.3 Forage-making equipment ..... 3  
    11.1.4 When to bale ..... 4  
    11.1.5 Weather damaged forage..... 5  
**11.2 Manure** ..... 5  
    11.2.1 Time of termination..... 5  
    11.2.2 Chemicals for brown manuring ..... 7  
**11.3 Grain and seed**..... 7  
    11.3.1 Harvest timing ..... 8  
    11.3.2 Desiccation, windrowing and crop-topping ..... 9  
        *Desiccation* ..... 9  
        *Windrowing*..... 10  
        *Crop-topping* ..... 10  
    11.3.3 Harvester equipment and set-up..... 10  
    11.3.4 Harvesting fire safety ..... 11  
    11.3.5 Harvesting for seed ..... 11  
    11.3.6 Weather-damaged grain ..... 12  
    11.3.7 Grain delivery ..... 12  
    11.3.8 Hay delivery ..... 13



## 12 Post-harvest management

Key points.....	1
12.1 Hay storage .....	2
12.2 Grain storage .....	3
12.2.1 Grain handling and cleaning .....	6

## 13 Marketing

13.1 Price determinants for feed grains in southern markets .....	2
13.1.1 Executing tonnes into cash .....	3
13.1.2 How to sell for cash.....	4
Price.....	4
Quantity and Quality.....	4
Delivery terms.....	4
Payment terms .....	4
13.1.3 Counterparty risk.....	6
13.1.4 Read market signals.....	6
13.1.5 Know the specifications of your grain .....	6
13.2 Ensuring access to markets for southern Australian feed grains .....	7
13.2.1 Storage and logistics.....	7
13.2.2 Separate the delivery decision from the pricing decision .....	8
13.2.3 Cost of carrying grain.....	8
Principles summarised.....	9
13.3 Hay .....	9
13.4 Hay demand .....	9
13.5 Hay supply.....	10
13.6 How the export market operates.....	10
13.6.1 How the domestic market operates.....	10
13.7 Market intelligence .....	11
13.8 Determining market outlook .....	11
13.9 Conclusion.....	12