



Edition 2017

## **ALGERIE: fourrages pâturés.**

En Algérie, une tradition consiste à faire pâturer les céréales par des moutons. Regard sur l'expérience australienne.


Choix variétal, engrais, semis direct et irrigation d'appoint permettent une meilleure maîtrise de cette technique.

**Djamel BELAID.**

مهندس زراعي

# 12 Bonnes raisons

de pratiquer le pâturage en vert.

### Pâturage et récolte de grains

Il est possible de faire pâturer de l'orge ou du colza (semés tôt) puis de mener la culture jusqu'à la récolte sans perte de rendement.

### Viroses

Lors du pâturage, la salive des animaux n'augmente le risque de propagation de virus.

### Enrouleur et kit d'irrigation

Les enrouleurs et kit d'irrigation permettent aujourd'hui une irrigation de grandes surfaces et donc de pratiquer des semis précoces.

### Semences prêtes à l'emploi

L'idéal est de toujours disposer d'un lot de semences prêt à l'emploi dès qu'un orage de fin d'été - début automne survient.

### Semis précoce

Un semis précoce permet de disposer d'un fourrage vert plus tôt en saison.

### Semis direct

Le semis direct présente l'avantage de la vitesse et d'entrer sur une parcelle sans risque de s'embourber. Contrairement à un cover-crop, il n'assèche pas le sol.

### Sillon collecteur de pluie

Les semis précoces sont exposés au risque de sécheresse automnale. Pratiquer le semis direct avec un "sillon collecteur de pluie" permet de valoriser la moindre pluie et d'assurer une meilleure germination-levée.

### Variétés

Toutes les variétés de céréales ne réagissent pas de la même façon à la pratique du pâturage en vert.

### Orge pâturée

L'orge se prête parfaitement à la pâture. Il existe une longue tradition du pâturage de "l'orge en vert" (g'sill) en Algérie.

### Colza pâturé

Le colza présente la faculté de pousser très vite. Il produit rapidement une grande quantité de fourrage vert.

### Désherbage

Sur les parcelles infestées par les mauvaises herbes, le pâturage des céréales permet de réduire la concurrence.

### Fertilisation azotée

Apporter une fertilisation N adéquate dès le semis afin de maximiser la production de fourrage. Dès la fin du pâturage apporter un complément d'azote. Un apport en cours de pâturage peut être toxique pour les animaux.

### Chargement par hectare

Viser 1 000 kg de poids vif par hectare.

### Date arrêt du pâturage

Le pâturage doit être arrêté avant le début de l'élongation de la tige c'est à dire avant le stade GS31 (1er noeud visible)..

## PATURAGE

# Une agriculture d'opportunité.

## Growers in the Victorian Mallee are keeping seed in the silo 'ready-to-go'

### Growers in the Victorian Mallee are keeping seed in the silo 'ready-to-go'

Michael Moodie.

Mallee Sustainable Farming's Michael Moodie says more growers in the Victorian Mallee are keeping seed in the silo 'ready-to-go' in case they snag a late summer or early autumn storm on which they can early sow dual-purpose cereals.

Michael says the move to dual-purpose wheat in his area started after the 2010-11 summer, where a record 500 millimetres left growers wanting to capitalise on the unseasonal moisture.

Michael had a footy mate at Deniliquin, New South Wales, who was irrigating EGA WedgetailPBR and he thought it was worth a trial in the Mallee: "We really wanted to think outside of the box and try something different to make use of the stored soil moisture," he says.

"While EGA WedgetailPBR might not be the best variety for us, we are trying to adapt a high-rainfall zone wheat as best we can because there aren't any low-rainfall-zone-specific varieties. It's not a whole shift in practice but it's another option and helps with risk management."

Michael says the key at this time of year (March) is having the seed, fertiliser and airseeder ready to go immediately after it has rained. Successful germination could be at risk by waiting until after rain to prepare for sowing because the seedbed can dry out quickly.

Michael says that after a dry summer, low-rainfall zone

(LRZ) growers would need a late summer or autumn storm of about 30mm for early sowing to be viable.

"It has to be seen as an opportunity from a grain point of view. We have to have the seed sitting there but not expect to sow it every year because we'll be disappointed if we do try every year.

"Past the second week of April, growers should be looking at other varieties," he says.

### ZOOM

"The more subsoil moisture the less the risk. Wheat roots grow at one centimetre per day so by using a long-season variety you are allowing the roots to grow deeper into the profile to access more water and nutrients.

### CONSEILS

I see it as a practice in terms of opening up your sowing window because in the LRZ you don't know when your next sowing opportunity may be."

### More information:

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# Quelle date de pâturage?

## Réaliser le test de l'arrachage.

### Rules of thumb for grazing cereals

Denna Lush 03.03.2014

Cereal grazing can assist with weed control in wheat during winter and spring. CSIRO trials at Canberra in 2010 found grazed Mackellar wheat could yield 33 per cent more grain than ungrazed Mackellar wheat, **partly due to higher weed competition in the ungrazed crop.**

With an increasing trend to early sow dual-purpose crops after summer or early autumn rain, GRDC-funded research has supported the development of best management practices as a guide for growers.

CSIRO research by Dr John Kirkegaard and Dr Hugh Dove has been working towards this for cereal crops, particularly for the medium-to-high-rainfall zone where varieties such as EGA WedgetailPBR logo are proving popular.

Dr Dove's research has focused on best management practices to minimise the effects of grazing on wheat.

He has found that timing of stock removal rather than stocking rate is the critical factor to ensure good recovery and yield.

### Paddock selection and sowing time

Paddocks must be prepared well in advance of sowing to ensure maximum establishment of young plants, including:

- adequate weed control,
- retention of soil moisture where possible and
- management of stubble loads.

Dr Dove says crops need to be sown early to capture the benefits of grazing.

Sow in March, if possible, using a long-season or true winter variety.

### ZOOM

#### Salive des moutons, hors de cause

While early-sown wheat is exposed to greater risk of wheat streak mosaic virus (WSMV), CSIRO trials in Canberra found that WSMV was not spread by sheep saliva during grazing.

#### Adventices estivales et respect des rotations

The greater risk is more likely related to crop and weed hygiene over the preceding summer so adequate summer weed control, or sowing the wheat after canola as a break crop, will reduce the WSMV risk.

### Variety choice

Dr Dove says the choice of which cereal cultivar to grow is an agronomic decision; however, long-season or true winter types will be a more flexible fit into the dual-purpose system.

### Quand démarrer le pâturage?

Dr Dove says grazing can start as soon as cereal plants are well anchored – use the 'tug test' – and when the amount of forage exceeds one tonne of dry matter per hectare.

The decision about when to start grazing is much less important than the decision about when to stop.

### CONSEILS

Afin de déterminer le stade de la culture à partir duquel le pâturage peut démarrer, il suffit de tirer à la main sur quelques plants.

S'ils résistent à l'arrachage, le pâturage peut démarrer.

# Azote et contrôle des adventices?

Un moyen de contrôler les mauvaises herbes.

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## Fertilisation des parcelles pâturées

Nitrogen should be applied at sowing to ensure good early plant growth and the build-up of a feedbank.

## Pas d'azote juste avant pâturage

Post-sowing nitrogen application should be left until after grazing and should not be applied just before grazing due to the the risk of high forage nitrate levels.

## Toxicité des nitrites par temps froid

High nitrate in forage can lead to nitrite toxicity in grazing livestock, especially under cool, cloudy conditions.

## Apport d'azote après pâturage

Growers may safely apply 50 kilograms of nitrogen per hectare as urea immediately after grazing finishes to boost plant recovery.

## Contrôle des mauvaises herbes

“Cereal grazing can be a major contributor to weed control in the crop in winter and spring,” he says.

“CSIRO trials at Canberra in 2010 found grazed Mackellar wheat could yield 33 per cent more grain than ungrazed, partly due to higher weed competition in the ungrazed crop.

**Sur les parcelles fortement infestées, le rendement du blé peut être augmenté de 33%.**

## ZOOM

“At grain harvest, the weed contents (mainly annual ryegrass) of the grazed and ungrazed crops were two per cent and 10 per cent of the total biomass, respectively.”

## CONSEILS

*Le pâturage de l'orge en vert peut s'avérer intéressant sur les parcelles fortement infestées par les mauvaises herbes. Ndlr.*

## CHARGEMENT

# Quel chargement à l'hectare?

Prévoir 1 000 kg de poids vif par hectare.

### Grazing management

Stocking rates should be balanced to prevent underuse or overgrazing of crops.

### 1000 kg de poids vif par hectare

CSIRO research suggests that a useful 'rule of thumb' is to graze with about 1000 kg of stock liveweight per hectare.

### 33 moutons ou 3 boeufs/ha

This could be, for example, 33 sheep at 30 kg each or three cattle at 330 kg each. In trials in south-east New South Wales this rate of stocking has resulted in about one month of grazing.

**Viser pour chaque hectare 33 moutons de 30 kg chacun ou 3 boeufs de 330 kg chacun.**

Dr Dove says provided livestock are removed before a critical crop growth stage, it is likely that over a wide range of stocking rates there will be little effect of the grazing on ultimate grain yield.

### Chargement à l'hectare

“Very low stocking rates – about 10 dry sheep equivalents (DSE) per hectare – give good liveweight gains because there is so much cereal forage. Although they are uneconomic because they do not make best use

of it,” he says. “At a higher stocking rate – from 15 to 20 DSE/ha – ‘patch grazing’ can develop, where stock overgraze cereals in patches while the rest of the crop continues to grow and becomes less preferred by stock.

### ZOOM

“Patch grazing can lead to lower liveweight gains than lower or higher stocking rates, because of the very high and concentrated stocking rate.”

### Arrêt de la période de pâturage

#### Une décision lourde de conséquences

As with canola, the decision about when to remove stock is more important than the stocking rate.

### Avant l'élongation des tiges

Animals must be removed before the crop reaches GS31 (just before stem elongation with one node visible) to ensure there are no impacts from grazing.

### CONSEILS

Growers can put a small 'exclusion cage' in the crop to stop animals grazing the crop in the cage. When the crop inside the cage reaches GS31, the grazed crop will be slightly less developed, at about GS30. Stock can be removed knowing that GS31 has not been reached.

# Quelle supplémentation minérale?

## Surveiller les besoins des animaux en Magnésium et Sodium.

### Supplémentation minérale

Wheat forage has a high potassium (K) content – about three to four per cent of dry matter – and a very low sodium (Na) content, often less than 0.02 per cent of dry matter.

Dr Dove says this can result in a very high K/Na ratio in wheat forage, which can reduce absorption of magnesium (Mg) in the gut of livestock and limit liveweight gains.

“Young livestock grazing wheat can be deficient in Na and Mg and so should be supplemented at a rate which will allow mineral supplement intakes of 20 grams per day per sheep or 140g per day for cattle.

“Supplementation is cheap and in grazing trials, has resulted in increases in liveweight gain from 15 to 60 per cent, far in excess of the cost of supplements (Table 1).”

Mineral supplements are not required for livestock grazing oats or canola because of their much higher forage Na contents.

### CONSEILS

For barley, recent work near Canberra indicated a possible response to Mg/Na in young sheep, but more work is needed for confirmation. Responses to supplementation with triticale have been variable, reflecting the variability in its Na content.

**Contrairement à l'avoine et le colza, des essais ont montré une réponse à MG/Na des animaux pâturant de l'orge.**

TABLE 1 Effect of mineral supplementation on the liveweight gains of sheep and cattle grazed on dual-purpose wheat in south-east NSW and the ACT.

Livestock	Supplement	Increase in liveweight gain (%)
<b>Sheep</b>		
	Magnesium	24 to 25
	Sodium	18 to 37
	Magnesium and sodium	31 to 54

### Cattle\*

	Magnesium	14
	Sodium	23
	Magnesium and sodium	21 to 62

\*Cattle data courtesy of Rebecca van Es, University of Western Sydney, and Julian Minehan, Landmark, Goulburn.

### Profitability and risk

Dual-purpose cereals grazed in south-east Australian mixed-farming systems include wheat, oats, barley and triticale. The decision of which cereal to use is an agronomic one but in most years, wheat is chosen because of its higher value. For this reason, research has also focused on wheat.

### ZOOM

A CSIRO trial at Goulburn, NSW, from 2009 to 2011 found grazing dual-purpose wheat could deliver 2600 DSE grazing days/ha while delivering 6.4t/ha in yield at the end of the season. CSIRO and NSW Department of Primary Industries research indicates that gross margins for dual-purpose wheat at the paddock level are about \$100/ha to \$400/ha more than a grain-only enterprise.

**Pâture une céréale puis la récolter en grains peut apporter une marge supplémentaire de \$100/ha à \$400/ha par rapport à une parcelle menée seulement en grains.**

### More information:

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[www.csiro.au](http://www.csiro.au) (search 'HRZ dual purpose')

ps: les sous-titres sont de la Rédaction. Ndlr.

## TEMOIGNAGE

# 200 agneaux pâturant des céréales.

## Une expérience réussie

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**The grower: Matt Curtis**  
**Image of grower Matt Curtis**

### **Matt Curtis.**

Grower Matt Curtis, from Mildura, Victoria, has increased the proportion of EGA WedgetailPBR wheat in his rotation at the expense of other cereals grown for feed, such as oats.

Matt worked with Mallee Sustainable Farming's Michael Moodie to trial EGA WedgetailPBR on 40 hectares after the extremely wet 2010-11 summer and autumn.

It was sown in the first week of April and ran 200 wether lambs from May to July. It then yielded two tonnes/ha at harvest.

Matt has sown EGA WedgetailPBR in 2012 and 2013, and while the results have not been as outstanding as the first year, partly because of late breaks in both years, it has been a good grazing alternative that has potential to be taken through to grain, should the season be favourable in spring.

This year, Matt will crop about 2430ha of wheat, 250ha of peas and canola, 400ha of cereals to graze and 200ha of vetch. He runs 900 Merinos ewes, half are mated to Merinos for a self-replacing flock and the other half to White Suffolks.

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