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NEWSLETTER
VOLUME 25: NUMBER 1, 2010

Welcome to the first issue of the Grassland Society of NSW newsletter for 2010. For many of you the New Year & decade has bought good summer rain. Fingers crossed that the rain continues through the autumn months with a few days of sunshine here and there to allow lots of productive pastures to be sown.

2010 is a milestone year for the Grassland Society as we celebrate 25 years as an organisation and our 25th conference at Dubbo in July. The organising committee for the conference is well underway with the conference program and tours – check out the update on page 14. If it has been a while since you have been to a conference why not come to Dubbo and help us celebrate this important anniversary.

This issue is packed with lots of good reading – the first article on page 3 "Increasing soil organic carbon of agricultural land" by Dr Yin Chan is very topical and has been requested by a number of members. This article gives a very good background into what is meant by soil organic carbon, why it is important to agriculture, the different carbon pools and how to measure carbon accurately. This article will be continued in the next newsletter and part 2 will cover some of the management aspects around increasing soil carbon. Have you been measuring and/or monitoring soil carbon levels on your property? Have you altered your management practices to increase the carbon levels in your soil? If so we would love to hear about what you are doing either as an article or a letter to the editor.

The second article on page 10 in the newsletter is about a very worthy program run out of the University of New England in collaboration with the Primary Industries Centre for Science Education (PICSE). This program lets secondary students with an aptitude for science, experience for themselves the diverse and rewarding range of careers supporting primary industries available in Australia.

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I have been involved with this project over the last couple of years and have found it to be a very well organised and a worthwhile experience for not only the students but also the scientists involved. The Grassland Society of NSW is sponsoring the PICSE program at UNE in 2010 supporting two students in the program. We look forward to hearing about their progress later in the year.

There is also a good article by Mick Duncan on Barley Yellow Dwarf Virus (BYDV) in oats on page 16. This article provides a good coverage on the symptoms of BYDV, the effect of the disease on the crop and management options to reduce losses.

On behalf of the Society I congratulate Dr Hugh Dove from the CSIRO (and state committee member) on his appointment to the position of joint Chief Editor of *Grass and Forage Science* (refer to page 20). We wish Hugh all the best with this new exciting and challenging position.

Lastly I ask you all to explore the Grassland Society of NSW website www.grasslandnsw.com.au – we are gradually making changes to make this site to hopefully make it easier to navigate and more relevant to you the members. We would welcome your feedback on the website on the discussion page.

Carol Harris
Editor

The Grassland Society gratefully acknowledges the following premier sponsor for 2009/2010

Australian Farm Journal
THE NATION'S FARM BUSINESS MAGAZINE

Increasing Soil Organic Carbon of Agricultural Land

Dr Yin Chan, Industry & Investment NSW

Increasing soil organic carbon can improve soil health and help to mitigate climate change;

Although there is a limit on the amount of organic carbon that can be stored in soils, the large losses in the past means that many Australian agricultural soils have the potential for large increases.

Soil organic carbon levels are sensitive to management practices. Many management practices that are effective in increasing soil organic carbon are also effective in improving crop and pasture yields.

The actual amount of soil carbon that can be stored is dependent on the farming system (management practices), soil type and climatic conditions as well as the initial soil carbon level of the site.

What is Soil Organic Carbon ?

Soil Organic Carbon (SOC) refers to the carbon associated with soil organic matter. Soil organic matter is the organic fraction of the soil that is made up of decomposed plant and animal materials as well as microbial organisms but does not include fresh and un-decomposed plant materials, like straw and litter, lying on soil surface. Soil carbon can also be present in inorganic forms, e.g. lime or carbonates in some soils in drier areas.

Carbon cycle and soil carbon pools

SOC forms part of the natural carbon cycle (Figure 1). Organic material is manufactured by plants through the process of photosynthesis using atmospheric carbon dioxide and water as raw materials. The plants (and the animals feeding on them) eventually die and return to the soil where they are decomposed and recycled. Minerals are released into the soil and carbon dioxide back to the atmosphere.

There is a continuous turnover of organic carbon materials in soil, and SOC is not a uniform material but rather a complex mixture of organic compounds at different stages of decomposition.

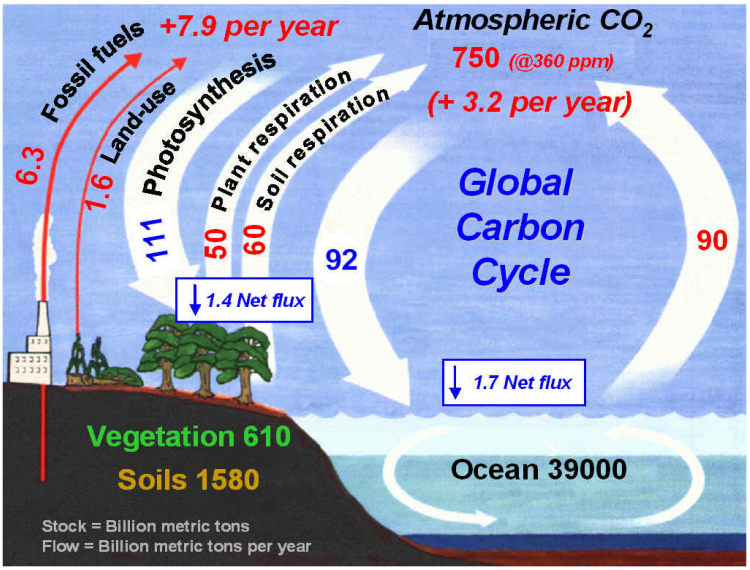

Figure 1. Soil organic carbon forms part of the natural carbon cycle

It is convenient to divide total SOC into different pools dependent on their ease of decomposition, namely labile pool, slow pool and inert pool. The labile pool includes all the freshly added plant and animal residues as well as micro-organisms. As these are easily decomposed, they are labile. The slow pool includes well decomposed organic materials, the humus. The inert pool refers to the fraction that is old, resistant to further breakdown and represents the products of the last stage of decomposition, e.g. charcoal.

Therefore soils differ not only in total SOC but also in the composition of the different SOC pools.

Importance of soil organic carbon in agriculture

Soil organic carbon as the basis of soil fertility

Soil organic carbon is important for all three aspects of soil fertility, namely chemical, physical and biological fertility.

Nutrient availability:
Decomposition of soil organic matter releases nitrogen, phosphorus and a range of other nutrients for plant growth.

Soil structure and soil physical properties:
SOC promotes soil structure by holding the soil particles together as stable aggregates, improves soil physical properties such as water holding capacity, water infiltration, gaseous exchange, root growth and ease of cultivation.

Biological soil health:
As a food source for soil fauna and flora, soil organic matter plays an important role in the soil food web by controlling the number and types of soil inhabitants which serve important functions such as nutrient cycling and availability, assisting root growth and plant nutrient uptake, creating burrows and even suppressing crop diseases.

As a buffer against toxic and harmful substances:
Soil organic matter can lessen the effect of harmful substances e.g. toxins, and heavy metals, by acting as buffers, e.g. sorption of toxins and heavy metals, and degradation of harmful pesticides.

"Soil organic carbon is the basis of sustainable agriculture"

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Soil organic carbon as a sink of atmospheric carbon

As a result of human activities releasing carbon dioxide into the atmosphere (particularly fossil fuel consumption and land use practices), the carbon pool in the atmosphere has increased and the elevated carbon dioxide is considered to be a contributory factor to the danger of global warming and climate change. However, SOC is a very important component of the global carbon cycle (Fig.1 and Table 1). It is the largest component of the terrestrial carbon pools, approximately twice the amount of carbon in the atmosphere and in vegetation. If more carbon is stored in the soil as organic carbon, it will reduce the amount present in the atmosphere, and therefore help to alleviate the problem of global warming and climate change. This process of storing carbon in soil is called soil carbon sequestration

Table 1. Carbon pool sizes and changes due to human activities

Carbon pool size	
Vegetation	610 Gt[1]
Atmosphere	750 Gt
Soil	1 580 Gt
Ocean	39 000 Gt
Carbon changes due to human activities	
Fossil fuel use	+ 5.5 Gt/year
Land use	+1.6 Gt/year
Rate of carbon increase in the atmosphere	
	+3.3 Gt/year

Source: 'The carbon cycle, climate and the long-term effects of fossil fuel burning', JF Kastings, *Consequences* Vol 4, No 1, 1998.

[1] Gt = Gigatonne, which is 1000 million metric tonnes

How much carbon can be stored in soils?

There are a whole range of SOC levels in different soils. For instance, for the surface soils, SOC ranges from about 10% in alpine soils to less than 0.5% in desert soils. The amount of SOC stored in the soil profile can be considerable. For example, if there is 1% SOC over 30 cm soil depth, the amount of SOC stored over 1 ha of land can weigh about 42 t. Usually, the surface layer has the highest level of SOC which decreases with depth down the soil profile. The actual amount of SOC present in a soil is dependent on a number of factors.

Measuring soil carbon

- SOC is usually measured in the laboratory on soil samples collected from the field. There are two kinds of test for SOC determination, namely one which is based on acid digestion and the other based on combustion principle. The latter measure all the carbon present in a sample of soil whereas the latter measure part of the organic carbon.
- SOC results are usually expressed as % C by weight (i.e. g C per 100 g of soil). SOC results can be converted to soil organic matter (SOM) level by multiplying the SOC value by a conversion factor of 1.72. This assumes that SOM present in soil, on average is made up of 58% carbon.
- Very often it is more practical to express SOC on per ha basis, namely as ton C per ha. To perform such calculation, knowledge of the bulk density of the soil to the sampling depth and the sampling depth is needed. As an example, if SOC=1% and bulk density of the soil =1.4 Mg/m^3 to 30 cm depth (1Mg = 1000 kg = 1 tonne), the amount of SOC present in the soil to 30 cm depth of 1 hectare is 1.0% C x 1.4 Mg/m^3 x 30cm = 42 tonnes/ha.
- To obtain reliable SOC results, it is important firstly to collect a representative soil sample and secondly to have the soil samples analysed by an accredited laboratory using standard methodology.

Factors affecting soil carbon level

Soil carbon levels are determined by factors such as rainfall, temperature, vegetation and soil type and reach equilibrium values associated with individual systems and locations. However, these equilibria are disturbed when areas are cleared and used for agricultural production.

Globally, clearing natural vegetation for agriculture results in large reductions in SOC levels and further declines may occur due to management practices (Figure 2). In Australia, it has been estimated that soil carbon levels have dropped by up to 50 % when compared to pre-agricultural periods. Most of the reduction in SOC occurs in the surface soil layer, 0-10 cm. Therefore, soil carbon levels of agricultural soils are lower than corresponding soils under natural vegetation. This difference in SOC indicates the potential for soil carbon storage. As indicated in Figure 2, rapid decline in SOC occurs when land under

natural vegetation is cleared and converted to agriculture but restoration of SOC levels (e.g. under reduce tillage) occurs at a much slower rate.

In agricultural systems, soil carbon levels tend to be variable and dependent on management practices. The change is SOC is determined by the balance of carbon inputs over losses.

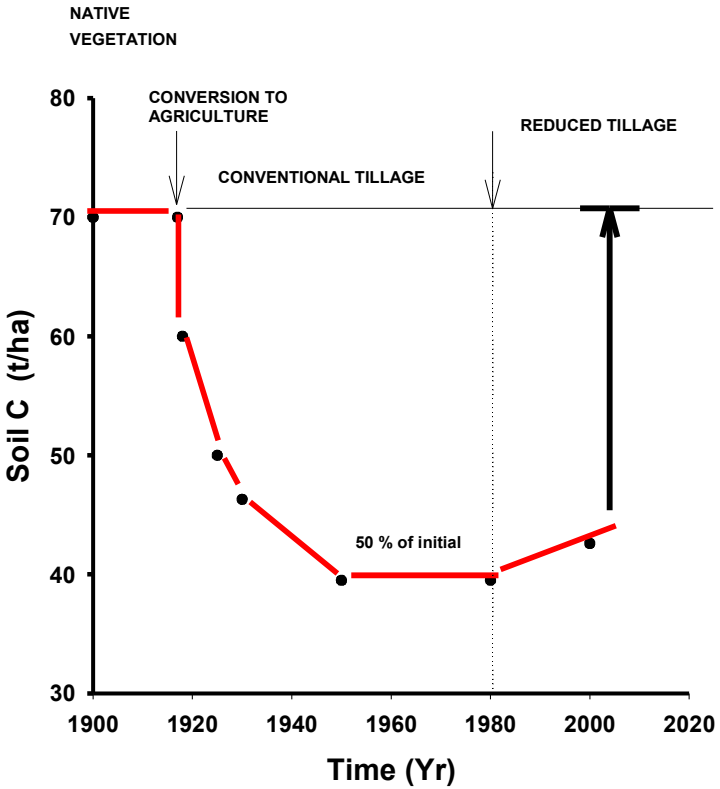

Figure 2. Historical change in SOC as a result of agricultural development, showing soil carbon sequestration potential.

Increasing soil organic carbon of agricultural land is an Industry & Investment NSW Primefact (No 735) and been reprinted in part in this newsletter with the permission of the author. Part two of this article will be published in the next edition of the newsletter. Part 2 of this will cover management practices that can decrease and increase SOC levels and how these practices can be incorporated into farming systems.

New members

The Society welcomed the following new members at the Management Committee meetings of November 2009 and February 2010:

Jason Tremain (Baldry); Peter Witschi (Orange);
Nicole Hyde (Wagga Wagga); Jessica Hogan (Bathurst);
Stewart Lamond (Wang Wauk); and Paul Tudor (Glen Innes)

PICSE at the University of New England

Susanna Grieg, Science Education Officer, The University of New England

The Primary Industries Centre for Science Education (PICSE) has a focus of linking selected keen, able tertiary bound science students and science teachers with the broad range of science and scientific careers supporting primary industries. To make this link, the PICSE program runs the following activities –

- PICSE Industry Placement Scholarships are awarded to students selected through an application and interview process. This scholarship includes a 5 day Science to Industry Student Camp and a 5 day Industry Placement working with an industry or research scientist.

- Teacher Professional Development events provide science teachers with a greater understanding of the science supporting local primary industries.

- Reunions for past scholarship students and Science Investigation Awards for Yr 7-10 Science students.

Following the establishment of the national PICSE centre (based at the University of Tasmania), the NSW Activity Centre of PICSE was set up at UNE in 2007. Since this time the program at UNE has continued to expand as shown in the Table 1.

Table 1. Measurable outcomes from the PICSE program at the UNE.

Outcomes	2007-08	2008-09	2009-10
Schools linked into program	10	16	19
N° of students presented to	225	324	382
Industry Placement Scholarships offered	11	15	19
Teachers attending TPD[A]	20	20	20
TPD resources	0	0	1B
Previous scholarship reunion	0	0	1
Science Investigation awards – Yr 9 & 10 students	0	0	1

[A] Teacher Professional Development
[B] Under development

Sponsorship from the Grasslands Society of NSW

At present, the UNE PICSE program runs from the start of April in one year to the end of March in the following year. This way the program culminates in the camp and industry placements in January during the summer school holidays. The UNE PICSE program appreciates the generous support of the Grasslands Society of NSW which will provide two scholarships in the 2010/11 phase of the program.

The students for these scholarships will be selected during the year after a series of school visits and the completion of applications and interviews. These students will then attend the camp and be placed with scientists for their industry placement in January 2011. Their reports will then be written and we look forward to making these reports available to the Grasslands Society in February 2011. We will also acknowledge the Grassland Society support throughout the year on our website.

Past activities through UNE PICSE program that have been relevant to grassland and pasture management have included –

- A guided tour of the Glen Innes long-term rotation experiment and 'a hands-on' activity looking at aspects of soil health between exploitive and non-exploitive rotations. (January 2009).
- A 5 day PICSE Industry Placement at McMaster Research Station for a student Tiffany Hunt. This placement involved a comparison and investigation of pasture assessment techniques. (Jan 12-23 2009)
- A 5 day PICSE Industry Placement for Caitlin Zahner at Glen Innes Research Station (18- 22 Jan 2010).

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The following is an extract from Caitlin Zahner's report describing her 2009-10 PICSE Industry Placement Scholarship experience.

"The 2010 PICSE Industry Placement Scholarship has provided an insight into the broad range of agricultural science careers and the agricultural degrees available at the University of New England. The camp at Echidna Gully was an enriching experience allowing the opportunity to meet other like minded students from New South Wales who share an avid interest in science.

The Industry Placement at the Glen Innes Agricultural Research Station was a colossal experience with Carol Harris endowing knowledge about the aspects involved in a career in plant and pasture research. This has given me background information into a researching career. Great aspects of the job include both practical and theoretical work and both are mentally stimulating. Farm consultancy is an interesting aspect of Carol Harris's career in terms of plant identification, advising farmers on grazing management and regenerating pastures.

The importance of plant and pasture identification in agriculture assists farmers in making managerial decisions such as what to grow and where, grazing management and future diversification strategies. Gaining experience in identifying grasses and other pasture plants is valuable knowledge that was gained along with the ability to determine pasture composition. An experiment was conducted where date were collected to determine the approximate composition of pasture in two paddocks and from there, the amount of green matter in the paddock was determined hence, so too was the amount of palatable feed for stock. Overall, the 2010 PICSE program has intensified my passion for science. An enriching experience, the program provided insight into careers and degrees available in the agricultural sector of science. The camp at Echidna Gully and the industry placement significantly broadened my knowledge about various career choices and different degrees available at UNE in agriculture. The enthusiasm and passion projected by the farmers on the camp and Carol Harris at the Agriculture Station made the experience so much more enjoyable and worthwhile.

The scholarship was an experience that allowed students from New South Wales with similar interests to share their knowledge and experiences and the industry placement was a direct view of what certain careers entail. Evidently, the program was immensely enjoyable and 'eye-opening".

Further feedback from students who have completed the PICSE Industry Placement scholarship revealed that every student indicated they would

recommend the UNE PICSE Industry Placement Scholarship Student Camp experience to their peers/friends. Comments from the students included:

"I am now more excited about my tertiary studies now as my questions have been answered and my interest sparked!"

"This camp has developed my understanding of the broad range and high level of science in agriculture."
"Through this camp, new ideas have surfaced and I have been enlightened on my options."
"It is great to have an insight into the range of science based career options / choices associated with primary industries. I have discovered a much wider range of options which I had not known about."

The PICSE program is capturing those motivated, able tertiary bound science students and exciting them about the opportunities in agricultural science. We look forward in linking two students to the Grassland Society scholarships in 2010 and involving and acknowledging the society at our various activities and events.

2010 Conference Update

Cathy Waters, Industry & Investment NSW

The 2010 conference is to be held in Dubbo in July. This is a very special conference for the NSW Grassland Society as it is our 25th Anniversary. Locating the conference in Dubbo this year has allowed the organisers to focus on mixed farm enterprises that characterise central western New South Wales. Dubbo is also conveniently located in the centre of the State and has the benefit of more than 70 accommodation venues.

The theme of the conference is "*Adapting mixed farms to future environments*". This theme was chosen because farmers are concerned over the impacts of climate change on pasture and livestock productivity, the influence of the Carbon Pollution Reduction Scheme on farms, the management of prolonged drought and extreme climatic events as well as legislative environmental and animal welfare requirements. These are some of the issues to be discussed the Dubbo conference.

The conference is to be held over two days, 28 and 29th July at the Dubbo RSL Club.

The first day is largely concerned with showcasing the practical experiences of key landholders in central western NSW. Three field tours are being organised giving information on prime lamb marketing, the incorporation of dual purpose crops and forage shrubs in pasture systems, the role of animal behaviour in livestock management and pasture utilisation. In addition, a visit to the Trangie Agricultural Research Centre is planned where latest research on the genetic variation in methane emission in cattle and results from the Sheep Information Nucleus Flock will be showcased.

The second day of the conference will have a more technical focus and while following the conference theme will specifically concentrate on animals, plants and natural resource management. Among other topics, presenters on this day will discuss precision sheep production, increasing productivity and persistence of native pastures, impact of extreme drought on pastures, new sub-tropical pasture species and how carbon may be valued in pasture systems.

Expressions of interest for contributing papers to this conference will be called for in mid March will papers due in **23 April 2010**. For further information on written contributions please contact cathy.waters@industry.nsw.gov.au

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Seeking Grassland Memorabilia

As part of our 25th Anniversary this year we are hoping to put together a display of memorabilia of the Grassland Society of NSW over the past 25 years at the conference.

We are seeking any relevant documents, records, old conference proceedings, old newsletters and photos from our members.

We of course would take very good care of this material and return it to you after the conference.

If you have any of the above please contact the Secretary by mail PO Box 471 Orange NSW or by email secretary@grasslandnsw.com.au

Barley Yellow Dwarf Virus in Oats

Mick Duncan, Agronomist Northern Agriculture, Armidale.

Background

Barley yellow dwarf virus (BYDV) is an important disease of winter cereals, including wheat, barley, oats and triticale and its host range extends to over 150 grass species. It is capable of causing significant losses in dry matter production in susceptible oat varieties in most years. The viral disease, spread by aphids from infected grasses to crops, is favoured by mild, moist summers and autumns which build-up aphid vector populations. Hence, BYDV is likely to be a greater problem in the northern tablelands and slopes of NSW than in other regions due to generally higher summer rainfall and a greater prevalence of mixed farming systems. These factors are likely to promote greater aphid survival and grass hosts over summer.

BYDV and the closely related Cereal yellow dwarf virus (CYDV) have a very wide host range, which includes volunteer cereals, wild oats and many annual and perennial grasses. BYDV is spread from these alternate hosts to forage and grain cereals by several aphid species, with early sown crops most susceptible to yield and production losses as they coincide with the peak cereal aphid activity in autumn. Where autumn rain has provided optimum conditions for aphid populations and the growth of alternate hosts, the disease is capable of causing widespread and significant forage reductions.

This leaflet outlines disease symptoms and control measures designed to limit the severity of BYDV in oat crops.

Symptoms in Oats

Symptoms of BYDV in oats, unlike other cereals, are very obvious and quite distinctive. Initial symptoms, frequently overlooked, are the development of small orange / brown blotches on leaves, usually closer to the tip. These blotches merge, affecting most of the leaf, resulting in a distinctive reddish /pink appearance. Infected plants have a stunted root system, poor tillering capacity, produce less forage and later in spring a scattering of white, sterile florets (“blasted florets”) will be visible. The disease usually occurs in a patchy fashion across the paddock and along fence lines near the alternate grass hosts and where colonies of aphids have been established in a crop and spread to adjacent plants.

Early sown oat crops intended for grazing are more likely to be affected than crops sown later in the season. However, as late sowings restrict potential dry matter production, this strategy is not attractive, other than for crops sown in winter for grain or hay.

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THE LAND
Your Rural Weekly

Where summer rainfall has been favourable for the growth of volunteer cereals and other alternate grass hosts of BYDV and cereal aphids, sowing in February and March is very likely to result in the development of the disease. When aphids have been active, early disease symptoms will become apparent within 4 weeks of crop emergence.

Various aphids are known to carry and spread the disease from nearby grass hosts and once they have acquired the virus by feeding on a diseased plant, aphids remain capable of transmitting BYDV to other plants they feed on until they die. Three aphids common in northern NSW, the oat aphid (*Rhopalosiphum padi*), corn aphid (*Rhopalosiphum maidis*) and rose grain aphid (*Metopolophium dirhodum*) are documented to transmit BYDV.

Similar symptoms, capable of causing confusion with BYDV are associated with a disorder in oats referred to as " Red leaf " or "Red tip". This is not uncommon in Queensland where BYDV is thought to be a minor disease.

Red leaf results from nutrient deficiencies, sometimes in association with sporadic water logging. Nitrogen deficiency is likely to be the major factor, but is often combined with a low phosphorus status. In southern Queensland, potassium, zinc and sulphur deficiencies have also been associated with Red leaf. This disorder is largely manageable by ensuring crops have adequate nutrition. Furthermore, in contrast with the irregular pattern of symptoms in BYDV affected crops, red leaf symptoms are usually more uniformly spread across a paddock, but are absent in sheep camps or other higher fertility locations.

Red leather leaf, caused by the fungus Spermospora, can also be confused with BYDV, but the lesions in plants infected by this fungus are less uniform and occur irregularly along the leaf surface. They commence as small light coloured spots surrounded by red /brown tissue. Leaves may then stiffen taking on a rather leathery feel.

Effect of BYDV on forage oat crops

The effect of BYDV on oats can be significant, mainly in terms of reduced forage production. Trial data (source unknown) has shown dry matter losses of between 10 - 75 % when plants are infected with BYDV soon after emergence and 5 -10 % if infection is delayed until after tillering. As most producers aim to sow long season, grazing oat varieties from mid February at high altitude locations or from mid March at lower altitude areas, the disease is a threat to forage and livestock production in most seasons.

Other less obvious effects of BYDV in oats arise from the stunted root system and generally less vigorous plant growth. Oats are frequently sown to aid in weed control making use of the competitive, dense canopy of a healthy crop. Unproductive crops infected with BYDV allow more weed invasion, thereby potentially requiring an extra herbicide application, greater weed seed build up or in some cases both these implications can be related to an unthrifty BYDV infected crop.

Management

Management of BYDV to reduce losses is based on the following strategies.

- Where possible, aim to commence the fallow no later than mid November i.e. 3 -4 months before an anticipated sowing. This will reduce the presence of alternate grass hosts in the paddock to be sown and serve to accumulate moisture in the soil profile. Maintain weed control over summer for the same reasons.

- For early sowings, choose a BYDV resistant variety, such as Nile or Bass. These two varieties show reasonable resistance in the field and are well suited to early sowing in the tablelands, but less commonly used at slopes locations because of slower growth to first grazing. All other current varieties are BYDV susceptible, to varying degrees.

- Make sure crops are sown with adequate fertiliser to promote rapid early growth. Crops with poor nutrition appear to be more susceptible to BYDV (personal observation) and once infected do not recover after grazing as well as crops with good nutrition.

- Chemical treatment to control aphids is not commonly practiced in NSW, but is worth local evaluation. Two options are :

  1. The use of a suitable insecticide within 6 weeks from emergence, where aphids are active in the seedling crop. This requires close inspection of newly emerged crops to detect aphid activity, as once plants are infected, there are no control options.

  2. An alternative strategy is to treat seed with a currently registered seed dressing, sold under the trade name of Hombre ®. This product contains imidacloprid (an insecticide) and tebuconozole (a fungicide) and currently represents a cost / effective treatment to control aphids for a period of up to 6 – 8 weeks after sowing. Oat seedlings and early tillering plants resulting from seed treated with this product prior to sowing are reported to have been free of aphids and subsequent BYDV symptoms and yielded better than untreated crops in central NSW in 2009.

The author would like thank Loretta Serafin and Dr Steven Simpfendorfer, Industry and Investment NSW, (Tamworth) whose valued comments and suggestions greatly improved this article.

Further Reading.

Cereal Leaf and Stem Diseases 2000, Hugh Wallwork GRDC publication.

Barley Yellow Dwarf Virus and Cereal Yellow Dwarf Virus. Victorian DPI Information Note 2009.

Society member appointed joint Chief Editor of *Grass and Forage Science*

The journal *Grass and Forage Science* is the journal of our sister Society in the United Kingdom, the British Grassland Society. It is also the official journal of the European Grassland Federation and now has subscribers in nearly 70 countries. It is a major English language journal that publishes the results of research and development in all aspects of grass and forage production, management and utilization; reviews of the state of knowledge on relevant topics; and book reviews. Authors are also encouraged to submit papers on non-agricultural aspects of grassland management such as recreational and amenity use and the environmental implications of all grassland systems. The Journal considers papers from all climatic zones.

Until recently, the Chief Editor of the Journal was Professor John Milne, ably assisted by Deputy Editor Mr Alan Hopkins. Following Prof. Milne's retirement from the position in December 2009, the Journal decided to appoint two joint Chief Editors. Mr Alan Hopkins, the former Deputy Editor, will fill one of these positions and the second appointee is Dr Hugh Dove, a CSIRO researcher in grazing livestock nutrition and a long-time member of both the Grassland Society of NSW and the Grassland Society of Southern Australia. The joint appointment is seen as increasing the 'presence' of the Journal in the Southern Hemisphere and hopefully, the proportion of submitted papers arising from that part of the world.

Society members who would like to know more about the journal and the possibility of publication therein should feel free to contact Hugh Dove at hugh.dove@csiro.au.

Congratulations to Hugh on appointment to this prestigious position from the Grassland Society of NSW members.

Do you have paper overload in your office?

Would you prefer to receive an electronic version of the newsletter?

Members of the Society now have the option of receiving their newsletter in electronic form – members who elect to take this option will get an email alert announcing that the newsletter is available at the website plus a link to the newsletter.

To receive your newsletter this way, please email your email address to the Secretary at secretary@grasslandnsw.com.au.

A printed newsletter will continue to be sent to members who do not wish to take up this option.

The Grassland Society gratefully acknowledges the following corporate sponsor for 2009/2010

Disclaimer: While every effort is made to publish accurate information, the Grassland Society of NSW does not accept responsibility for statements made or opinion expressed in this newsletter.

Inclusion of an advertisement in this publication does not necessarily imply an endorsement of the company or product by the Grassland Society of NSW.

From the president

Best wishes to all Grassland Society members for 2010, with high hopes for good seasonal conditions and profitable commodity prices. As most primary producers are price “takers” rather than price setters, these two factors are vital for a viable farming sector. With input costs, notably some crop chemicals and fertilisers now on the increase, timely rain for high yielding crop and pasture will be especially important this approaching autumn.

This newsletter under the guidance of Carol Harris is again full of topical and relevant information, continuing the excellent work of our previous editor, Haydn Lloyd Davies. Members are welcome to contribute articles to the editor as well as letters that Carol would be happy to include in subsequent newsletters.

This year is an important milestone for the Society. Formed in March 1985, the conference at Dubbo, in late July, will be our 25th and is already shaping up as an event not to be missed. The joint convenors, Kathi Hertel and Cathy Waters are well advanced with preparations for informative addresses and stimulating farm tours.

Our membership continues to hover around 400. While this is a healthy number and compares very well with similar organizations in NSW and interstate, I would be delighted if each of our current members would introduce one new member during 2010.

The benefits of membership are considerable, including newsletters, the annual conference proceedings, local activities and the possibility in the near future of Society activated research.

Best wishes again for the coming autumn.

Mick Duncan

THE GRASSLAND SOCIETY OF NSW INC.

A unique blend of people with a common interest in developing our most important resource – our Grasslands

The Grassland Society of NSW was formed in March 1985. The Society now has approx. 500 members and associates, 75% of whom are farmers and graziers. The balance are agricultural scientists, farm advisers, consultants, and executives or representatives of organisations concerned with fertilisers, seeds, chemicals and machinery.

The aims of the Society are to advance the investigation of problems affecting grassland husbandry and to encourage the adoption into practice of results of research and practical experience. The Society holds an annual conference, publishes a quarterly newsletter, holds field days, and is establishing regional branches throughout the State.

Membership is open to any person or company interested in grassland management and the aims of the Society.

OFFICE BEARERS OF THE GRASSLAND SOCIETY OF NSW – 2009-2010

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Mick Duncan (President)
Lester McCormick (Vice President)
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Subscription for 12 months (July to June) is $50. This entitles you to copies of the Newsletters and a copy of the Annual Conference Proceedings.

For more information, please contact the Society's Secretary, Janelle Witschi (telephone: 02 6369 0011).

Send membership application to:
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PO Box 471
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Email: secretary@grasslandnsw.com.au