

Diseases

Lucerne yellows

Grower survey highlights disease impact

Lucerne yellows is a common disease of New South Wales and South Australian lucerne crops, causing more than \$7 million in damage annually.

Little is known about the disease and its impact on the valuable pasture legume lucerne.

The symptoms of lucerne yellows disease make identification easy. The entire foliage of infected plants becomes yellow, with tinges of red in some cases.

Growers can confirm whether a suspect plant has the disease by checking for the characteristic brown layer under the tap root's 'bark'. An identification chart (see Figure 1) can be used as a step-by-step guide to deciding whether a suspect plant has the lucerne yellows disease.

Disease unveiled

Incidences of stunted lucerne plants with yellowing symptoms have been reported since the 1950s but until recently no research had gauged the extent of the problem.

During 1998, the University of Sydney and NSW Agriculture carried out a survey which found lucerne yellows a significant concern among growers and seed houses in NSW and South Australia. Although lucerne yellows

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can affect hay and forage crops, the survey concentrated on seed crops where yield losses were easier to measure.

Most farmers surveyed found the disease was present in lucerne crops in all or most years. NSW growers reported all or most stands were affected but those in South Australia frequently reported the disease was confined to just a few paddocks on each property. Eight seed house offices were also surveyed, finding lucerne yellows a frequent problem of seed crops. One office reported losses of up to 90 per cent in bad years while another suffered a 50% yield loss during 1997, costing \$500,000.

Although the survey does not measure precisely the economic impact of lucerne yellows, results show the potential for significant losses. The numbers of plants affected per stand were estimated at up to 75%. Conservative estimates indicate the disease would cause a loss of about \$2 million per year in NSW and, based on 1997-98 production figures and prices, \$5 million per year in South Australia.

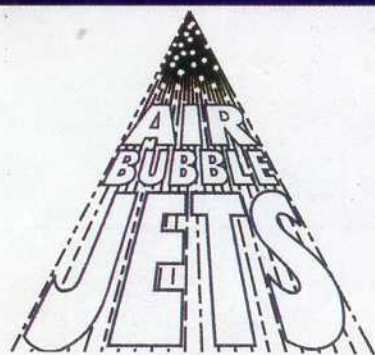
The little information available about lucerne yellows suggests a phytoplasma pathogen causes the disease. Phytoplasmas are known to cause yellowing in other crops and are usually transmitted by sucking insects such as leafhoppers. Australian lucerne is host to several leafhopper species which makes them prime candidates for disease carriers.

Control

Some farmers and seed houses attempted to control the disease by ploughing in, grazing and cutting — all drastic measures for a seed crop. Others sprayed the crop with insecticide, hoping that controlling insects would reduce the disease's spread. But most growers took no action due to the lack of knowledge about the disease and control recommendations. In the long term, growing resistant lucerne varieties may be the best control method for farmers. Further research is being carried out to determine the disease's cause, how it is transmitted, the vulnerable growth stages and methods of control.

Acknowledgements: Eric Elliott, Alex Nikandrow and Murray Fletcher, NSW Agriculture. For more information contact Geoff Gurr on phone (02) 6360 5551 or fax (02) 6360 5590.

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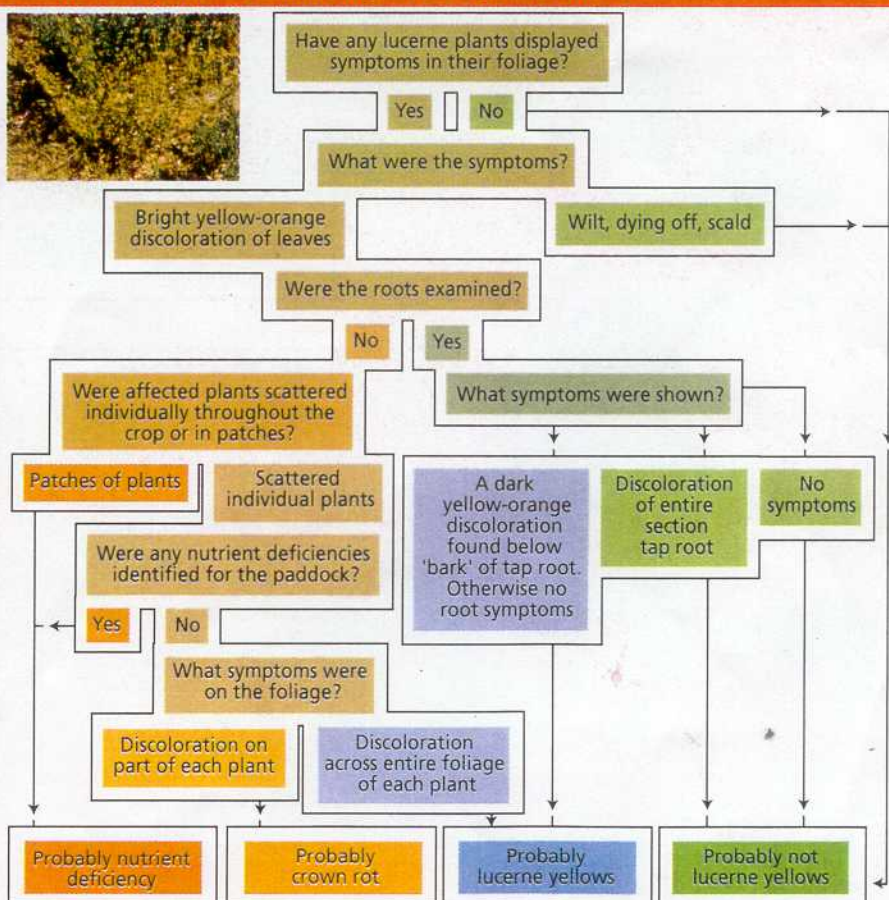
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FIGURE 1 A guide to identifying lucerne yellows disease



Source: University of Sydney and NSW Agriculture