How much stubble?

Michael Perry

Follow this and additional works at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4

Part of the Agronomy and Crop Sciences Commons

Recommended Citation

Available at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4/vol33/iss1/8

This article is brought to you for free and open access by Research Library. It has been accepted for inclusion in Journal of the Department of Agriculture, Western Australia, Series 4 by an authorized administrator of Research Library. For more information, please contact jennifer.heathcote@agric.wa.gov.au, sandra.papenfus@agric.wa.gov.au, paul.orange@dpird.wa.gov.au.
A vertical view of the quadrat shown in the photo on page 16, indicating the amount of lupin stubble needed to prevent wind erosion.

Table 2. The burial rate of surface stubble measured after one pass of various tillage implements

<table>
<thead>
<tr>
<th>Implement</th>
<th>Reduction in stubble cover %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc plough (15 cm spacing)</td>
<td>70</td>
</tr>
<tr>
<td>Tandem disc plough</td>
<td>55</td>
</tr>
<tr>
<td>Triple disc drill</td>
<td>35</td>
</tr>
<tr>
<td>Disc plough (7.5 cm spacing)</td>
<td>30</td>
</tr>
<tr>
<td>Chisel plough</td>
<td>27</td>
</tr>
<tr>
<td>Scarifier</td>
<td>25</td>
</tr>
<tr>
<td>Trash seeder</td>
<td>20</td>
</tr>
<tr>
<td>Blade plough</td>
<td>10</td>
</tr>
</tbody>
</table>

The short term penalty of soil loss is sandblasting of emerging crops, but the more insidious long term effect is decreasing soil fertility.

Firm guidelines now exist for the amounts of stubble cover needed to minimize wind erosion. Farmers can use photo-standards to determine these amounts. These levels are easily attained by most cereal crops.

Methods of reducing stubbles to levels that can be handled by seeding machinery are available. It is important for wind erosion control after seeding that adequate stubble remains on the surface after partial burial by tillage implements.

Further reading

The required amounts of stubble on the surface before cultivation depend on the machinery used. The data in Table 2 show a wide variation between different tillage implements in the proportion of stubble cover each implement will bury.

Ploughs reduce surface stubble cover the most, and so are the least desirable for the control of wind erosion. Even tined implements tend to bury about 25 to 30 per cent of surface stubble cover - so the amount of stubble cover needed must be increased. For an implement that buries about 30 per cent of stubble, the minimum amounts are about 1.0 t/ha for cereal stubble and 2.0 t/ha for lupin stubble.

Conclusions
Stubble retention systems are an essential part of cropping to control wind erosion and ensure the sustainability of farming.

The short term penalty of soil loss is sandblasting of emerging crops, but the more insidious long term effect is decreasing soil fertility.

Firm guidelines now exist for the amounts of stubble cover needed to minimize wind erosion. Farmers can use photo-standards to determine these amounts. These levels are easily attained by most cereal crops.

Methods of reducing stubbles to levels that can be handled by seeding machinery are available. It is important for wind erosion control after seeding that adequate stubble remains on the surface after partial burial by tillage implements.

Further reading

The required amounts of stubble on the surface before cultivation depend on the machinery used. The data in Table 2 show a wide variation between different tillage implements in the proportion of stubble cover each implement will bury.

Ploughs reduce surface stubble cover the most, and so are the least desirable for the control of wind erosion. Even tined implements tend to bury about 25 to 30 per cent of surface stubble cover - so the amount of stubble cover needed must be increased. For an implement that buries about 30 per cent of stubble, the minimum amounts are about 1.0 t/ha for cereal stubble and 2.0 t/ha for lupin stubble.

Conclusions
Stubble retention systems are an essential part of cropping to control wind erosion and ensure the sustainability of farming.