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LEGUME INOCULANTS FOR 1967

By W. A. SHIPTON, Plant Pathology Branch

PERIODIC changes are made in the strains of rhizobia released for the inoculation of various legume groups. These changes are made when it is evident from experimental data that better strains of rhizobia are available, or that the old ones are no longer effective. New strains of rhizobia may give improved nodulation of legume seedlings or increase dry matter yields.

In 1967 several changes are to be made in legume inoculants, and to help prevent confusion these changes are outlined and some of the reasons for them are given in this article.

In 1966 two cultures were available for clover. The general clover culture was recommended for use with subterranean clovers, except Woogenellup, and for red, strawberry, alsike, suckling, and white clovers. A special culture was available for use with the Woogenellup strain of subterranean clover, rose, and cupped clovers.

In 1967 one culture is recommended for use with all subterranean clovers, rose, and cupped clovers. A special culture will be available for red, strawberry, alsike, suckling, and white clovers. Recommendations for other legumes remain the same, that is, there is one culture for lupins and serradella, and, one for commercial and Cyprus barrel medics, harbinger medic and lucerne.

The recommendation for the provision of one culture for all subterranean, rose, and cupped clovers was made to U-DALS on the basis of experimental evidence gained at three sites in Western Australia, last season. The new culture will contain a mixture of *Rhizobium* strains WA 67 and WU 290.

Strain WU 290 is a University of Western Australia selection (isolated by D. L. Chatel and M. R. Greenwood), and as well as good first year performance it shows some promise of being able to persist to a greater extent than some previous commercial strains in areas where second year mortality is a problem.

The following Table shows that the strain is equal or superior to WA 67 in the first year. Both WA 67 and WU 290 are superior to strains previously used in the general clover culture (TA 1 plus UNZ 29).

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**Nodulation and dry matter yields of clovers inoculated with different bacterial strains**

<table>
<thead>
<tr>
<th>Rhizobium strain</th>
<th>Geraldton subclover</th>
<th>Woogenellup subclover</th>
<th>Kondinin Rose</th>
<th>Cupped clover</th>
<th>Geraldton subclover</th>
<th>Woogenellup subclover</th>
<th>Kondinin Rose</th>
<th>Cupped clover</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>WA 67</em></td>
<td>99</td>
<td>93</td>
<td>98</td>
<td>92</td>
<td>27.1</td>
<td>21.4</td>
<td>26.7</td>
<td>24.7</td>
</tr>
<tr>
<td>WU 290</td>
<td>100</td>
<td>100</td>
<td>98</td>
<td>95</td>
<td>34.6</td>
<td>32.0</td>
<td>29.8</td>
<td>23.6</td>
</tr>
<tr>
<td>† TA 1</td>
<td>94</td>
<td></td>
<td></td>
<td></td>
<td>19.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>† UNZ 29</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
<td>25.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uninoculated control</td>
<td>39</td>
<td>51</td>
<td>29</td>
<td>20</td>
<td>22.1</td>
<td>19.0</td>
<td>12.9</td>
<td>15.9</td>
</tr>
</tbody>
</table>

* Strain present in the special culture for Woogenellup in 1966.
† A mixture of these strains was in the general clover culture in 1966.

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