NOTE
EFFECTS OF PROCESSING ON GERMINATIVE CAPACITY OF SEED
OF TALL OATGRASS, *ARRHENATHERUM ELATIUS* (L.)
MERT. AND KOCH

One of the reasons some very promising grasses are not in common
use is the presence of awns or other appendages which make
seeding through a drill difficult. An efficient system of processing\(^1\)
seed to remove appendages and thus facilitate seeding has been re-
ported.\(^2\) By the expedient of hammering at controlled rates of speed
and feeding, and by using the correct screen, it was found possible
to obtain the required results with a minimum of injury to the seed.
Such hammering and subsequent cleaning has become an accepted
practice for processing many kinds of seed.

Although seed processing has recognized advantages, there remains
the possibility of an adverse effect on the germinative capacity of the
seed. This effect could be evident either immediately or after ware-
house storage. In some quarters there is reluctance to plant processed
seed carried over for a single season. The species around which most
controversy has centered is tall oatgrass. This article reports the
results from numerous tests with processed and stored tall oatgrass
seed.

Lots of tall oatgrass seed have been processed by the Pullman
Nursery each year, beginning in 1939. Aliquot samples of one lot
were taken for determinations of degree of de-awning and dehulling,
injury to the caryopses, purity, and germination. The samples were
stored in a dry, unheated room and tested for germination in sub-
sequent years. The laboratory tests were made by Dwight D. Forsyth,
Washington State College Seed Analyst. Germination tests were
based on duplicate samples of 100 seeds each, according to standard
technics. The percentage of seed injured was determined by examina-
tion under a 20× binocular microscope.

The degree of treatment required to facilitate planting depends
upon the nature of the planting and the species used. Tall oatgrass is
usually milled twice. After the first run the awned fraction is removed
by a scalper, remilled, and then both fractions recombined. Table 1

<table>
<thead>
<tr>
<th></th>
<th>Natural %</th>
<th>De-awned %</th>
<th>Dehulled %</th>
<th>Injured %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmilled check</td>
<td>90.75</td>
<td>8.00</td>
<td>—</td>
<td>1.25</td>
</tr>
<tr>
<td>Milled once</td>
<td>45.00</td>
<td>20.00</td>
<td>34.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Milled twice (recommended)</td>
<td>14.00</td>
<td>36.00</td>
<td>47.25</td>
<td>2.75</td>
</tr>
<tr>
<td>100% dehulled</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>3.00</td>
</tr>
</tbody>
</table>

\(^1\)The term “processing”, as here used, includes both middling (hammering)
and cleaning.

\(^2\)SCHWENDIMAN, JOHN L., SACKMAN, ROLAND F., and HAFENRICHTER, A. L.
Processing seed of grasses and other plants to remove awns and appendages.
U.S.D.A. Circ. 558. 1940.