FEEDS, SEEDS AND WEEDS.

By E. H. Jenkins.
CONNECTICUT AGRICULTURAL EXPERIMENT STATION.

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FEEDS, SEEDS AND WEEDS.

BY E. H. JENKINS.

There are a number of mixtures sold as feeds in this State which contain large quantities of seeds of undesirable and pestilent weeds of which a considerable portion are alive and will, under proper conditions, promptly germinate and grow.

The weed seeds are not always quickly detected by casual inspection, because they are variously mixed with chaff and oat hulls, with linseed, barley and corn products and are often mixed or smeared with molasses.

These facts are naturally not mentioned in the statements of composition, yet they are more important to the buyer than the chemical analysis.

A moderate food value may be granted to ground weed seeds, or to some species of them, but it is very doubtful if small whole seeds are broken up and digested by the animal.

It has been proved that fermenting manure kills many weed seeds when they are kept in it for some time, but common experience fully justifies the belief that the farm may be stocked with weeds which come along with the manure.

Weed seeds which are scattered abundantly wherever feed and feed residues are scattered, will surely make their appearance in the fields. Thus charlock appeared last year quite abundantly on the station land, where it had not been seen for twenty-six years at least. On searching for the cause, it appeared that the junkos or snowbirds had been fed with wheat screenings on a flat roof in the neighborhood during a severe winter and the charlock seeds in the screenings had no doubt been blown from the roof to the lawn.

Within the last biennial period we have found weed seed very abundant in the feeds named in the following table.

This table shows in sufficient detail the results of a careful examination of the samples, made by Miss M. H. Jagger of this station.

There are given the total number of seeds present in each pound of the mixture or "feed" and the number of each of the four
commonest and most dangerous kinds of weeds. The vitality of most of them was determined and is given in the table.

Seeds of the false foxtails or bottle grasses (Chetochloa), pigweeds or lambs' quarters (Chenopodium), knot weed or bindweed (Polygonum), are found abundantly in all the feeds named; black mustard and charlock (Brassica) are abundant in most of them, and ragweed (Ambrosia), the worthless panies (Panicum capillare, filiforme and sanguinale), sorrel and dock (Rumex), the common and Canada thistle and catchfly (Silene) are also found in most of them.

Every pound of each of these mixtures brings to the farm from five thousand to eighty-six thousand seeds, of which, in some cases a hundred, in others more than twenty-two thousand are alive.

Certain manufacturers claim to destroy the vitality of the weeds which they mix with feed, but in no one of those above reported has even this measure of protection to the purchaser been thoroughly done. It has been apparently attempted only in case of the sucrene feeds.
FEEDS, SEEDS AND WEEDS.

IN ONE POUND OF THE FEEDS NAMED.

<table>
<thead>
<tr>
<th>Molac Horse Feed</th>
<th>Sucrene Horse Feed</th>
<th>Sucrene Dairy Feed</th>
<th>H. J. Flax Feed</th>
</tr>
</thead>
<tbody>
<tr>
<td>$26.00</td>
<td>$31.00</td>
<td>$30.00</td>
<td>$25.00</td>
</tr>
<tr>
<td>19855</td>
<td>19876</td>
<td>19877</td>
<td>19703</td>
</tr>
<tr>
<td>22224</td>
<td>8574</td>
<td>8160</td>
<td>48663</td>
</tr>
<tr>
<td>2872</td>
<td>2509</td>
<td>2786</td>
<td>31752</td>
</tr>
<tr>
<td>603</td>
<td>27</td>
<td>128</td>
<td>13814</td>
</tr>
<tr>
<td>1512‡</td>
<td>1622</td>
<td>1101</td>
<td>105</td>
</tr>
<tr>
<td>453</td>
<td>none</td>
<td>none</td>
<td>705</td>
</tr>
<tr>
<td>8316</td>
<td>453</td>
<td>192</td>
<td>1749</td>
</tr>
<tr>
<td>3476</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>5241</td>
<td>3458</td>
<td>3466</td>
<td>*</td>
</tr>
<tr>
<td>2568</td>
<td>103</td>
<td>311</td>
<td>*</td>
</tr>
<tr>
<td>1159</td>
<td>532</td>
<td>415</td>
<td>*</td>
</tr>
</tbody>
</table>

‡ Besides 3124 seeds of other species of Polygonum.

All of these weeds are characteristic of grain screenings which are the refuse separated from grain, in order to make the latter marketable or fit for milling. These screenings vary a good deal in quality. Thus an analysis recently made here of wheat screenings showed about 33 per cent. of flax and shrunken cereal, 15 per cent. of foxtails, 8 per cent. of bindweeds and pigweeds, 15 per cent. of weed seeds of other species and 21 per cent. of dust, broken seed and sand. Even such a mixture is much better than many others which often contain very little, if any, wheat or flax.

An average price for screenings is $12.00 a ton in Chicago or $16.00 in Connecticut.

Mixed with molasses and chaff or hulls, and in some cases with really good feed materials, some of them sell at prices which are nearly as high as those paid for first-class feeds.

Made in considerable part of inferior materials and charged with weed seeds, they are dangerous on the farm.
A sample of Barley Sprouts, sent by a prospective buyer, contained:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley sprouts</td>
<td>70.5%</td>
</tr>
<tr>
<td>Weed seeds</td>
<td>29.5%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

The weed seeds were

- Corn Cockle (*Vaccaria*) 14.0% per cent.
- Wild oats (*Avena fatua*) 10.0% “ “
- Bindweed (*Polygonum*) 2.8% “ “
- Four other species of weeds 2.7% “ “

Further particulars regarding the presence of weed seeds in feeds will be found in Bulletins 156 of the Maine Station and 131 of the Vermont Station.