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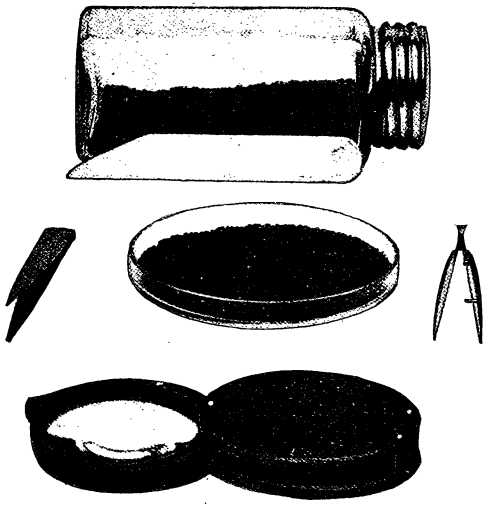

ARE OUR FARM SEEDS PURE?

SUMMARIZED BY
F. H. HALL

FROM BULLETIN BY
G. T. FRENCH.

PUBLISHED BY THE STATION.

POPULAR EDITION[1] OF BULLETIN No. 333.

ARE OUR FARM SEEDS PURE?

F. H. HALL.

Voluntary seed inspection. New York State has no seed inspection law, but for several years this Station has voluntarily tested the purity of samples of seed sent by dealers and farmers, without charge. This is willingly done because of its benefit to the farmer, and the practice will be continued, but the increasing number of samples makes it impossible to give a detailed, percentage analysis. Each sample will, however, be carefully examined, the kind and in a general way the amount of the different weed seeds present specified, adulteration noted if shown, the exact amount and the kind of dodder seed contained stated for samples of alfalfa and red clover, and if the sample appears to contain much old, light seed or be otherwise undesirable, the sender will be warned against using it.

The Station has not the help nor the facilities for making germination tests on a large scale, so will not do this kind of testing. Finding out whether seeds will grow or not is so simple a matter[2] that every plant-grower should himself test the germinating power of all seed he intends to sow in quantity.

Standards of germination and purity. As a guide in determining whether the germination is good or poor the United States Department of Agriculture has compiled a table of standards, showing what percentage of the different seeds should grow. These figures are, for the principal farm seeds: Bluegrass 45–50 per ct., celery 60–65, alsike and white clover 75–80, onion 80–85, alfalfa, crimson and red clover, sweet corn, meadow fescue, millet, timothy, and tomato 85–90, barley, beans, buckwheat, cabbage, field corn, oats, and wheat 90–95, peas 93–98, and beet, because of multiple seeds in a seed ball, 150. As to purity: Bluegrass may show 10 per ct. of foreign material and still be considered a good sample, alsike and white clover 5 per ct., alfalfa, celery, crimson clover, timothy and tomato 2 per ct., but all others on the above list are below standard if they show more than 1 per ct. of other seeds or refuse.

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1 This is a brief review of Bulletin No. 333 of this Station, on Seed Tests Made at the Station during 1910, by G. T. French.

2 See Leaflet M of this Station.

Station tests. During the year 1910 the Station examined 947 samples of seed — 566 of alfalfa, 200 of red clover, 69 of alsike clover, 13 of white clover, 77 of timothy and 22 of miscellaneous seeds, about as many samples as in two years preceding. These samples indicated improvement in seed quality, especially in alfalfa and red clover seed. Much less dodder seed was found in the alfalfa samples, and decidedly less evidence of planned adulteration, while of 200 red clover seed samples 165 were marked "excellent," 30 "average," and only 5 "poor."

Suggestions for samples. The examiners often found difficulty in giving a fair estimate of the seed because of the small size of the sample. As the size of the sample decreases, so also does the liklihood that it fairly represents the lot of seed, and with small samples more rapidly than the mathematical decrease. *Not less than* **two ounces** *of alfalfa seed or clover seed should be sent; nor less than* **one ounce** *of grass or millet seeds or the smaller vegetable seeds.* Part of the sample should be taken from the top, part from the middle and part from the bottom of the bag or other container. The fine, heavy seeds of many noxious weeds frequently sink to the bottom of the bag.

Alfalfa seed samples. The most noteworthy unfavorable feature shown in examining the 566 samples of alfalfa was the presence of large-seeded dodder in 35 out of the 53 dodder-infested samples, while in the previous two years only 14 of 126 samples showing dodder seed contained the large-seeded kind. The small-seeded dodder can easily be sifted out by a 20-mesh sieve[3] but the large-seeded kind can not be so removed. That seedsmen are sifting alfalfa seed before exposing it for sale is indicated by the presence of small-seeded dodder in only 5 per ct. of the samples in 1910, whereas it was found in more than 20 per ct. of the samples tested in 1906–8. The appearance of many samples — dull, dusty gray color — and the presence of seed of *Centaurea repens,* a plant of Asia Minor, indicate that much Turkestan seed is on the market. This variety of alfalfa may do well in New York, but it is better to obtain Ameri-

[3] See Circular No. 8 of this Station.

can-grown seed whenever possible. Three samples of alfalfa seed showed adulteration (more than 5 per ct. impurity), one with yellow trefoil and two with sweet clover, and nine other samples showed from 1 to 3 per ct. of these same seeds, probably from plants accidentally in the fields.

Other seeds examined. As already indicated, the red clover seed was very good in quality, without any adulteration. Of the 200 samples, only five contained more than traces of foreign seeds and only seven any dodder, all, however, of the large-seeded kind. The alsike clover seed was not quite so good, as one sample was found adulterated with yellow trefoil. One-fourth of the samples had to be marked "average" or "poor." Timothy seed was of good quality, more than 93 per ct. of the samples grading "excellent." The white clover and miscellaneous samples showed no evidences of adulteration.

Weed seeds found. Roquette, a mustard-like plant with light yellow, purple-veined flowers, has appeared in some alfalfa fields in New York and seeds of it were found in two samples. Its capabilities as a weed are not known as yet, but it is not thought liable to be a dangerous pest. Russian thistle also is believed to be comparatively harmless in New York State. The Station would be glad to receive information regarding these or any other new or uncommon weeds and samples of them. Data relating to the weed seeds found are summarized in the following table:

IMPURITIES FOUND IN SEEDS TESTED IN 1910.

Kind of impurity	Number of samples				Kind of impurity	Number of samples			
	Alfalfa	Red clover	Alsike clover	Timothy		Alfalfa	Red clover.	Alsike clover	Timothy
Samples examined	566	200	69	77	COMMON WEEDS, GRASSES, ETC.				
ADULTERANTS:					Alsike clover	24	11	.....	35
Yellow trefoil	1	.....	1	....	Catchfly	22	8	.....	.....
Sweet clover	2	.....	.....	....	Crab grass	7	.....	.....	.....
NOXIOUS OR NEW WEEDS:					Foxtail, green	340	107	.....	7
					Foxtail, yellow	90	35	.....	.....
Canada thistle	....	2	1	....	Lady's thumb	....	52	.....	1
Centaurea repens	89	.....	.....	....	Lamb's quarters	231	18	.....	4
Charlock	31	.....	.....	....	Melilot	14	.....	.....	.....
Chicory	116	2	.....	....	Ox-eye daisy	....	.....	5	.....
Dock	110	94	22	2	Pigweed	111	17	.....	7
Dodder, large seeded	35	7	.....	....	Plantain, broad leaved	....	.....	.....	3
Dodder, small seeded	28	.....	.....	....	Sheep sorrel	16	51	38	8
Plantain, English	187	96	9	2	Sweet clover	7	.....	.....	2
Roquette	2	.....	.....	....	Timothy	33	35	61	.....
Russian thistle	94	.....	.....	....	Yellow trefoil	1	.....	4	.....
Wild carrot	14	3	.....	....					