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9-1-1915

Results of seed tests for 1915, Bulletin, no. 177

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New Hampshire Agricultural Experiment Station

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Recommended Citation

Taylor, F. W.; Prince, F. S.; and New Hampshire Agricultural Experiment Station, "Results of seed tests for 1915, Bulletin, no. 177" (1915). *NHAES Bulletin*. 140.

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Ballou No 1-178 OK - RBS. 4/10/42

No Ann. Rpts. in this volume.

Experiment Station Library.



Class ~~639.73~~
Number ~~N53~~
Volume ~~6, esp. 2~~
Source. Dartmouth Bookbinding
Received. September, 1916
Cost. Binding, 1.60¢
Accession No. 3542

NEW HAMPSHIRE
AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF AGRONOMY

Results of Seed Tests
For 1915

MADE FOR THE
STATE DEPARTMENT OF AGRICULTURE



By F. W. TAYLOR and F. S. PRINCE

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS
DURHAM, N. H.

NEW HAMPSHIRE COLLEGE OF AGRICULTURE AND
THE MECHANIC ARTS.

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STATION, DURHAM, N. H.

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SEED TESTS.

MADE SEPTEMBER 1, 1914, TO SEPTEMBER 1, 1915.

The provisions of the Pure Seed Law enacted by the General Court in 1909, require the publication annually of a bulletin showing the results of all seed tests made officially during the previous year. The administration of this law is in the hands of the State Commissioner of Agriculture, who has appointed the writer, Agronomist of the Experiment Station, as his regular agent for making all tests and analyses in this state.

During the year ending September 1, 1915, forty-two samples of seed were voluntarily sent in for analysis. In addition to these, an authorized representative collected eighty, making a total of 122 samples submitted for analysis during the year.

The samples sent in by the collector were secured from nineteen dealers in sixteen different towns, representing nine of the ten counties of the state. These samples included 2 of alfalfa, 4 of alsike clover, 4 of white clover, 4 of barley, 14 of corn, 16 of millet, 3 of oats, 7 of red clover, 6 of redtop, 15 of timothy, and 5 of miscellaneous seeds.

A summary table showing the results of the examination of these 80 samples as regards their guaranteed percentage of purity and germination will be found on pages 13 to 15.

Of the 42 samples sent in voluntarily for examination, the writer has no knowledge that seeds represented by these samples were on the market. Quite frequently dealers and other individuals ask for a report upon the quality of a given sample and make the purchase of seed for their own use upon the basis of this report. It should not, therefore, be understood that seeds represented by all the samples inspected were offered for sale by the parties for whom the inspection was made.

In the testing and analyzing of seeds, just as in the chemical analysis of fertilizers, there are certain factors which make exact duplication of results impossible. There are always slight variations in drawing a sample of seed, in sampling the sample, in weighing small fractional parts of it, in the counting and identification of numerous seeds, etc.; there may be also fluctuations in the temperature and humidity of the germinating chamber which may affect the percentage of germination. Methods of analysis may also vary somewhat. For these reasons, a slight variation from the guarantee or standard or from a previous analysis should not be considered of consequence. It is our opinion that a variation of $1\frac{1}{2}\%$ for purity and 5% for germination should be regarded as within the limit of error and duplication.

The writer desires to acknowledge his appreciation of the careful and efficient work of Mr. W. A. Osgood, who assisted in making the tests and examinations of the samples herewith reported.

SEED EXAMINATION, 1915.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grains Seeds	Percent Inert Matter	Percent Germination
606	TIMOTHY (10) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914. Alsike Clover, 226; Kentucky Blue Grass, 226; White Clover, 226.	99.6	.....	.1	.3	95.0
607	RED TOP (11) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914. St. John's Wort, 2,718.	98.8	.1	.....	1.1	*
608	RED CLOVER (12) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914. Green Fox-tail, 90; Rib Grass, 270.	99.6	.1	.....	.3	95.5
609	ALFALFA (13) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914. Kentucky Blue Grass, 90.	99.5	.....	trace	.5	97.0
610	ALSIKE CLOVER (14) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914. Rib Grass, 452; Selfheal, 226; Timothy, 2,938.	99.1	.1	.4	.4	95.0
611	BARLEY (2-Row, 15) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914. Wheat, 30; Oats, 75.	97.6	.....	.6	1.8	98.5
612	BARLEY (6-Row, 16) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914.	99.5	.....	.....	.5	99.5
613	OATS (21) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914. Wheat, 60.	99.4	.....	.4	.2	95.5
614	WHEAT (17) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914. Oats, 15.	98.9	.....	trace	1.1	95.5
615	RYE (19) Holbrook Grocery Company, Keene, N. H. Oct. 27, 1914. Timothy, 15.	97.1	.....	trace	2.9	93.0
616	ALFALFA ("A") Blackman & Griffin Company, Ogden, Utah. Nov. 20, 1914. Lamb's-quarters, 90.	99.7	trace	.....	.3	69.5
617	OATS E. Crosby & Co., Brattleboro, Vt. Nov. 11, 1914.	99.8	.....	.....	.2	96.0
618	OATS ("The Elwoods") The Cleveland Grain Company, Cleveland, Ohio. Dec. 19, 1914. Wheat, 210; Barley, 30.	97.6	.....	1.1	1.3	98.5
620	OATS A. E. Daniels, Epping, N. H. Jan. 20, 1915.	.....	.....	.....	.....	90.5
621	OATS E. C. & W. L. Hopkins, Greenfield, N. H. Feb. 1, 1915. Wheat, 15.	99.7	.....	.1	.2	93.0
622	OATS W. F. Peel, Nashua, N. H. Jan. 30, 1915.	.....	.....	.....	.....	99.0
623	RED TOP John Gault, Manchester, N. H. Feb. 19, 1915. Cinquefoil, 9,060; Timothy, 2,265.	76.5	1.0	.5	22.0	*
624	OATS E. F. Hodgdon, N. Conway, N. H. March 12, 1915. Wheat, 30; Barley, 30; Wild Mustard, 15.	99.0	.1	.4	.5	77.5
625	OATS Frost & Pierce, Claremont, N. H. March 24, 1915. Black Mustard, 15; Wheat, 45; Barley, 15; Sorrell, 30; Yellow Fox-tail, 15.	99.2	.1	.4	.3	89.5
626	ALSIKE AND TIMOTHY Earle M. Hazelton, Chester, N. H. April 6, 1915.	.....	.....	.....	.....	72.0
627	ALFALFA (Extra Fancy, World) Earle M. Hazelton, Chester, N. H. April 6, 1915.	.....	.....	.....	.....	97.5
628	ALFALFA (Planet, Choice) Earle M. Hazelton, Chester, N. H. April 6, 1915.	.....	.....	.....	.....	72.5
629	ALFALFA (Star Brand, Prime) Earle M. Hazelton, Chester, N. H. April 6, 1915.	.....	.....	.....	.....	62.5
630	OATS C. W. Martin, Keene, N. H. April 12, 1915.	.....	.....	.....	.....	96.5

* Below.

* In the germination of redtop, duplicate results are especially difficult to secure. In order, therefore, to allow for a reasonable variation, all samples which indicate a degree of vitality equal to the standard, 75%-80%, are simply marked "standard"; those testing above this standard are simply marked "above," and those testing below are simply marked "below."

SEED EXAMINATION, 1915.—Continued.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Foreign Matter	Percent Germination
631	OATS (No. 1)..... Gates & Moore, Lisbon, N. H. April 29, 1915.	.....	.....	.....	.....	97.0
632	OATS (No. 2)..... Gates & Moore, Lisbon, N. H. April 29, 1915.	.....	.....	.....	.....	96.0
633	RED CLOVER (<i>Eureka</i>)..... Rand, Ball & King Co., Claremont, N. H. May 6, 1915. Alsike Clover, 180; Docks, curled, 90; Green Fox-tail, 900; Lamb's-quarters, 180; Buckhorn, 276; Prickly Lettuce, 630; Red Top, 90; Timothy, 3,150.	97.7	.4	.3	1.6	92.0
634	ALSIKE CLOVER (<i>Pan-American</i>)..... Rand, Ball & King Co., Claremont, N. H. May 6, 1915. Green Fox-tail, 266; Red Clover, 266; Timothy, 4,256; White Clover, 3,458; Yellow Trefoil, 266.	98.8	trace	.9	.3	89.0
635	TIMOTHY (<i>Gold Medal</i>)..... Rand, Ball & King Co., Claremont, N. H. May 6, 1915. Chickweed, 225; Green Fox-tail, 675.	99.6	.1	.....	.3	94.0
636	TIMOTHY (<i>Pan-American</i>)..... Rand, Ball & King Co., Claremont, N. H. May 6, 1915. Alsike Clover, 678; Cinquefoil, 226; Kentucky Blue Grass, 452; Peppergrass, 226; Red Clover, 226.	99.4	trace	.1	.5	89.0
637	BARLEY (<i>Chevalier</i>)..... Henry Evans & Co., Rochester, N. H. May 6, 1915. Wheat, 23; Oats, 184.	97.5	.....	1.1	1.4	97.0
638	JAPANESE MILLET..... Henry Evans & Co., Rochester, N. H. May 6, 1915. Barnyard Grass, 4,972; Ragweed, 226; Smartweeds, 452; Yellow Fox-tail, 6,215; Wild Buckwheat, 113.	93.7	5.6	.....	.7	86.0
639	HUNGARIAN MILLET (<i>No. 1 Fancy</i>)..... Henry Evans & Co., Rochester, N. H. May 6, 1915. Barnyard Grass, 90; Crab-grass, 180; Lamb's-quarters, 1,080; Ragweed, 90; Smartweeds, 1,350; Timothy, 360; Yellow Fox-tail, 270; Russian Thistle, 90; Fall Dandelion, 90.	98.5	.8	trace	.7	73.0
640	WHITE CLOVER (<i>Choice</i>)..... Henry Evans & Co., Rochester, N. H. May 6, 1915. Alsike Clover, 4,746; Rugel's Plantain, 226; Sorrel, 4,668; Timothy, 226; Scentless Camomile, 226.	97.8	.6	.6	1.0	90.0
641	ALSIKE CLOVER (<i>Eureka</i>)..... Henry Evans & Co., Rochester, N. H. May 6, 1915. Timothy, 1,130; Yellow Trefoil, 226.	99.1	trace	.8	.1	89.0
642	RED CLOVER (<i>Eureka</i>)..... Henry Evans & Co., Rochester, N. H. May 6, 1915. Green Fox-tail, 90; Alsike Clover, 90.	99.4	.1	trace	.5	94.5
643	TIMOTHY (<i>Pan-American</i>)..... Henry Evans & Co., Rochester, N. H. May 6, 1915. Alsike Clover, 675; Canada Blue Grass, 675; Yervain, 450.	99.5	trace	.2	.3	92.5
644	TIMOTHY (<i>Gold Medal</i>)..... Henry Evans & Co., Rochester, N. H. May 6, 1915.	99.7	.....	.....	.3	94.0
645	OATS..... E. E. Hodgdon, North Conway, N. H. May 6, 1915. Yellow Fox-tail, 15.	99.3	trace	.....	.7	96.0
646	ALSIKE CLOVER..... C. L. Jenness, Dover, N. H. May 14, 1915. Mayweed, 2,475; Buckhorn, 1,125; Red Clover, 2,700; Sorrel, 4,725; Timothy, 900; White Clover, 1,125; Sweet Mellilot, 450.	97.9	1.1	.7	.3	94.5
647	RED CLOVER..... C. L. Jenness, Dover, N. H. May 14, 1915. Alsike Clover, 1,620; Green Fox-tail, 900; Buckhorn, 90; Timothy, 2,970; Sunspurge, 180; Unknown, 180.	98.5	.3	.6	.6	96.0

SEED EXAMINATION, 1915.—Continued.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination
648	HUNGARIAN (80182) C. L. Jenness, Dover, N. H. May 14, 1915. Barnyard Grass, 90; Lamb's-quarters, 540; Ragweed, 96; Smartweeds, 1,170; Yellow Fox-tail, 270.	99.4	.4	.....	.2	93.5
649	TIMOTHY (Pine Tree)..... C. L. Jenness, Dover, N. H. May 14, 1915. Cinquefoil, 225; Lamb's-quarters, 225.	99.8	trace	.....	.2	94.5
650	KENTUCKY BLUE GRASS (45632)..... C. L. Jenness, Dover, N. H. May 14, 1915. Catchfly, 4,530.	95.5	.4	.....	4.1	.....
651	BARLEY (Montana) C. L. Jenness, Dover, N. H. May 14, 1915. Wild Mustard, 15.	96.2	trace	2.2	1.6	96.5
652	CORN (Red Cob Ensilage)..... C. L. Jenness, Dover, N. H. May 14, 1915.	97.9	.....	.....	2.1	96.0
653	CORN (Leaming) C. L. Jenness, Dover, N. H. May 14, 1915.	98.6	.....	.....	1.4	90.5
654	CORN (Sanford White) C. L. Jenness, Dover, N. H. May 14, 1915.	100.0	.....	.....	.....	91.0
655	SWEET CORN (Golden Bantam)..... C. L. Jenness, Dover, N. H. May 14, 1915.	100.0	.....	.....	.....	94.0
656	SPRING VETCH R. L. Costello, Portsmouth, N. H. May 10, 1915.	99.7	.....	.....	.3	87.0
657	WHITE CLOVER (88538)..... R. L. Costello, Portsmouth, N. H. May 10, 1915. Alsike Clover, 72,772; Canada Thistle, 226; Catchfly, 2,712; Cinquefoil, 678; Green Fox-tail, 452; Kentucky Blue Grass, 226; Lamb's-quarters, 1,130; Old Witch Grass, 1,356; Pig-weed, 226; Red Clover, 15,594; Red Top, 226; Rib-grass, 452; Rugel's Plan- tain, 2,034; Sorrell, 5,198; Timothy, 38,420; Yellow Trefoil, 226.	79.2	1.9	17.4	1.5	87.5
658	RED CLOVER (Kaiser C. 70115)..... R. L. Costello, Portsmouth, N. H. May 10, 1915. Alfalfa, 180; Alsike Clover, 630; Green Fox-tail, 450; Old Witch Grass, 90; Sun- surgence, 90; Sand Bar Grass, 90; Rib-grass, 810; Rugel's Plantain, 180; Smartweeds, 90; Three-seeded Mercury, 180; Timothy, 4,500; White Clover, 450; Yellow Trefoil, 90.	98.0	.7	.7	.6	92.5
659	ALFALFA (Pine Tree, 87524)..... R. L. Costello, Portsmouth, N. H. May 10, 1915.	100.0	.....	.....	.....	92.0
660	CRIMSON CLOVER) R. L. Costello, Portsmouth, N. H. May 10, 1915. Cow Cackle, 90; Rye, 90.	99.1	.1	trace	.8	96.0
661	TIMOTHY (Bison, 67121)..... R. L. Costello, Portsmouth, N. H. May 10, 1915. Alsike Clover, 2,475; Cinquefoil, 2,475; Kentucky Blue Grass 900; Sedge, 450; Pep- pergrass, 450; Red Top, 450; Rugel's Plan- tain, 450; White Clover, 1,350.	98.6	.5	.7	.2	92.5
662	TIMOTHY (Pine Tree, 65616)..... R. L. Costello, Portsmouth, N. H. May 10, 1915. Alsike Clover, 450; Kentucky Blue Grass, 900; Lamb's-quarters, 225; Red Clover, 225; Red Top, 225.	99.5	trace	.1	.4	95.5
663	HUNGARIAN (H 80190)..... R. L. Costello, Portsmouth, N. H. May 10, 1915. Crab-grass, 180; Green Fox-tail, 360; Lamb's-quarters, 90; Old Witch Grass, 270; Smartweeds, 1,350.	99.2	.4	.....	.4	94.0

SEED EXAMINATION, 1915.—Continued.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination
664	JAPANESE MILLET (81534)..... R. L. Costello, Portsmouth, N. H. May 10, 1915. Crab-grass, 90; Ragweed, 1,260; Smartweeds, 90; Yellow Fox-tail, 2,430.	97.5	2.2	....	.3	93.5
665	SPRING RYE..... R. L. Costello, Portsmouth, N. H. May 10, 1915. Oats, 15; Cow Cockle, 15; Unknown, 15.	99.5	trace	.1	.4	95.5
666	OATS..... Manchester Hardware Company, Manchester, N. H. May 6, 1915. Wild Sunflower, 60; Wheat, 60.	99.3	.1	.4	.2	96.5
667	WHITE CLOVER (30334)..... Manchester Hardware Company, Manchester, N. H. May 6, 1915. Alsike Clover, 18,758; Catnip, 226; Pig-weed, 452; Red Clover, 4,746; Rugel's Plantain, 1,808; Sorrell, 4,746; Timothy, 19,888; Yellow Trefoil, 226.	92.1	.8	5.8	1.3	89.0
668	RED CLOVER (Ace)..... Manchester Hardware Company, Manchester, N. H. May 6, 1915. Alfalfa, 90; Alsike Clover, 180; Barnyard Grass, 90; Canada Thistle, 270; Green Fox-tail, 990; Rib-grass, 540; Rugel's Plantain, 270; Smartweeds, 270; Sorrell, 90; Timothy, 270.	99.1	.6	.1	.2	91.5
669	ALSIKE CLOVER (Ace)..... Manchester Hardware Company, Manchester, N. H. May 6, 1915. Lamb's-quarters, 226; Pig-weed, 226; Red Clover, 1,356; Sorrell, 8,814; Timothy, 8,588; White Clover, 21,922.	94.5	1.0	4.2	.3	90.5
670	JAPANESE MILLET..... Manchester Hardware Company, Manchester, N. H. May 6, 1915. Barnyard Grass, 90; Ragweed, 180; Smartweeds, 810; Yellow Fox-tail, 90.	99.1	.7	....	.2	92.0
671	HUNGARIAN (80190)..... Manchester Hardware Company, Manchester, N. H. May 6, 1915. Barnyard Grass, 180; Lamb's-quarters, 900; Red Clover, 90; Smartweeds, 270; Yellow Fox-tail, 360.	99.2	.5	trace	.3	92.0
672	TIMOTHY (Pine Tree, 67310)..... Manchester Hardware Company, Manchester, N. H. May 6, 1915. Alsike Clover, 450; Cinquefoil, 225; Kentucky Blue Grass, 450.	99.7	trace	.1	.2	95.5
673	OATS (No. 1)..... F. N. Darling, Keene, N. H. May 6, 1915. Black Mustard, 30; Wheat, 30; Wild Buckwheat, 15; Unknown, 15.	99.7	.1	.1	.1	98.0
674	OATS (No. 2)..... F. N. Darling, Keene, N. H. May 6, 1915.	99.8	....	....	.2	98.5
675	OATS (White Mountain)..... F. H. Moore Inc., Laconia, N. H. May 14, 1915. Barley, 30.	99.5	....	.2	.3	98.5
676	TIMOTHY (White Mountain)..... F. H. Moore Inc., Laconia, N. H. May 14, 1915. Alsike Clover, 226; Kentucky Blue Grass, 904; Peppergrass, 452.	99.7	.1	.1	.1	96.0
677	TIMOTHY (Liberty)..... F. H. Moore Inc., Laconia, N. H. May 14, 1915. Alsike Clover, 450; Kentucky Blue Grass, 225; White Clover, 225.	99.4	....	.2	.4	93.5
678	MAMMOTH CLOVER (White Mountain)..... Batchelder Bros., Tilton, N. H. May 14, 1915. Green Fox-tail, 226; Fenugreek, 113.	99.0	.2	....	.8	92.5
679	CORN (Leaming)..... Batchelder Bros., Tilton, N. H. May 14, 1915.	97.1	....	....	2.9	96.0
680	CORN (Mastodon)..... Batchelder Bros., Tilton, N. H. May 14, 1915.	99.4	....	....	.6	92.0

SEED EXAMINATION, 1915.—Continued.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination
681	CORN (<i>Southern White</i>)..... O. B. Tilton, Nashua, N. H. May 14, 1915.	98.5	....	....	1.5	98.0
682	CORN (<i>Longfellow</i>)..... O. B. Tilton, Nashua, N. H. May 14, 1915.	100.0	....	....	....	99.0
683	RED TOP (<i>White Mountain</i>)..... Holbrook Grocery Company, Keene, N. H. June 19, 1915. Black-seeded Plantain, 453; Sorrell, 1,812; Yarrow, 4,077.	97.0	.4	....	2.6	†
684	TIMOTHY (<i>White Mountain</i>)..... Holbrook Grocery Company, Keene, N. H. June 19, 1915. Alsike Clover, 226; Sorrell, 226; White Clover, 452.	99.6	trace	.2	.2	94.0
685	BARLEY (<i>6-Row, White Mountain</i>)..... Holbrook Grocery Company, Keene, N. H. June 19, 1915. Oats, 15.	99.1	....	.1	.8	98.5
686	OATS (<i>White Mountain</i>)..... Holbrook Grocery Company, Keene, N. H. June 19, 1915.	99.8	....	....	.2	98.0
687	ALFALFA (<i>White Mountain</i>)..... Holbrook Grocery Company, Keene, N. H. June 19, 1915. Green Fox-tail, 90; Timothy, 90; Wild Mustard, 90.	99.9	.1	trace	trace	91.0
688	BARLEY (<i>2-Row, White Mountain</i>)..... Holbrook Grocery Company, Keene, N. H. June 19, 1915. Oats, 45; Wheat, 45.	96.8	....	.6	2.6	96.5
689	RED CLOVER (<i>White Mountain</i>)..... Holbrook Grocery Company, Keene, N. H. June 19, 1915. Alsike Clover, 180; Rib-grass, 180; Sorrell, 810; Timothy, 90.	99.0	.2	.1	.4	95.5
690	RED TOP (<i>XXX</i>)..... Goodnow Bros., East Jaffrey, N. H. June 14, 1915. Cinquefoil, 125,481; Pig-weed, 453; Rugel's Plantain, 2,718; Smartweeds, 1,812; Yarrow, 15,402; Miscellaneous, 4,530; St. John's Wort, 453; Black-eyed Susan, 1,359.	87.2	2.4	....	10.4	‡
691	TIMOTHY Clarence F. Clough, Gilmanton Iron Works, N. H. May 25, 1915.	....	....	....	....	94.0
692	RED CLOVER Clarence F. Clough, Gilmanton Iron Works, N. H. May 25, 1915.	....	....	....	....	97.0
693	PERILLA L. P. Nemzek, Gibbsboro, N. J. May 28, 1915.	....	....	....	....	0.0
694	ALSIKE (<i>86449, Old Home</i>)..... Abbott Grocery Company, Keene, N. H. May 25, 1915. Cinquefoil, 452; Kentucky Blue Grass, 452; Lamb's-quarters, 225; Mayweed, 225; Red Clover, 1,125; Red Top, 225; Sorrell, 12,600; Timothy, 40,050; White Clover, 28,125; Yellow Trefoil, 2,250.	90.7	1.8	7.4	.1	94.5
695	TIMOTHY (<i>67240, Old Home</i>)..... Abbott Grocery Company, Keene, N. H. May 25, 1915. Alsike Clover, 6,300; Cinquefoil, 225; Kentucky Blue Grass, 225; Lamb's-quarters, 225; Old Witch Grass, 225; Peppergrass, 225; Rugel's Plantain, 450; Sorrell, 450.	98.8	.2	.8	.2	91.0
696	JAPANESE MILLET (<i>Mastiff, 80196</i>)..... Abbott Grocery Company, Keene, N. H. May 25, 1915. Barnyard Grass, 90; Ragweed, 900; Smartweeds, 180; Yellow Fox-tail, 540.	98.8	.5	....	.7	95.5
697	TIMOTHY (<i>Mastiff, 66665</i>)..... Abbott Grocery Company, Keene, N. H. May 25, 1915. Cinquefoil, 226; Lamb's-quarters, 226; Smartweeds, 226.	99.6	....	.1	.3	91.0
698	GERMAN MILLET Abbott Grocery Company, Keene, N. H. May 25, 1915. Crab-grass, 270; Lamb's-quarters, 90; Smartweeds, 180; Yellow Fox-tail, 450; Witch Grass, 360.	99.5	.3	....	.2	92.0

† Above.

‡ Stand.

SEED EXAMINATION, 1915.—Continued.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination
699	HUNGARIAN (80187) Abbott Grocery Company, Keene, N. H. May 25, 1915. Ragweed, 90; Smartweeds, 2,970; Yellow Fox-tail, 360.	98.3	1.0	....	.7	92.5
700	RED TOP (Acc) John B. Varick & Co., Manchester, N. H. July 19, 1915. Mayweed, 900; Timothy, 900; Yarrow, 49,950; Juncus spp., 4,500.	93.2	1.0	trace	5.8	†
701	RED TOP (White Mountain) H. W. Taylor, Hinsdale, N. H. June 14, 1915. Peppergrass, 453; Rugel's Plantain, 1,812; Smartweeds, 4,530; Yarrow, 15,855.	97.1	.4	....	2.5	†
702	CORN (Eureka White) Magowen Bros., Claremont, N. H. May 25, 1915.	97.8	....	....	2.2	98.0
703	CORN (Cuban Giant) Bacon Bros., Henniker, N. H. May 25, 1915.	100.0	....	....	....	97.0
704	WHITE CLOVER (Duplicate of No. 657) R. L. Costello, Portsmouth, N. H. Alsike Clover, 57,600; Catchfly, 1,575; Catnip, 450; Cinquefoil, 1,575; Green Fox-tail, 225; Kentucky Blue Grass, 225; Lamb's-quarters, 900; Old Witch Grass, 1,125; Peppergrass, 225; Pigweed, 675; Red Clover, 9,900; Red Top, 225; Rib-grass, 225; Rugel's Plantain, 5,400; Sorrell, 6,525; Timothy, 39,375.	82.0	1.8	13.9	2.3	88.5
705	TIMOTHY L. A. Bickford, Milan, N. H. June 1, 1915. Alsike Clover, 900; Bracted Plantain, 225; Cinquefoil, 900; Kentucky Blue Grass, 225; Lamb's-quarters, 225; Red Clover, 450; White Clover, 900.	99.1	.1	.3	.5	92.0
706	CORN (Early Triumph) P. R. Hatton, Lebanon, N. H., June 1, 1915.	99.3	....	....	.7	99.0
707	CORN (Early Canada) P. R. Hatton, Lebanon, N. H., June 1, 1915.	100.0	....	....	....	96.0
708	CORN (Pride of the North) P. R. Hatton, Lebanon, N. H., June 1, 1915.	99.3	....	....	.7	98.0
709	CORN (Sanford) P. R. Hatton, Lebanon, N. H., June 1, 1915.	99.2	....	....	.8	98.0
710	RED CLOVER (Pan-American) C. M. Hildreth & Son, Lebanon, N. H. June 1, 1915. Crab-grass, 450; Docks, 180; Green Fox-tail, 1,980; Pig-weed, 180; Rugel's Plantain, 5,670; Sorrell, 180; Yellow Trefoil, 180.	98.0	.8	.6	.6	95.5
711	HUNGARIAN (H 80204) P. R. Hatton, Lebanon, N. H. June 1, 1915. Barnyard Grass, 180; Green Fox-tail, 90; Lamb's-quarters, 180; Ragweed, 180; Smartweeds, 90; Yellow Fox-tail, 270; Unknown, 90.	99.0	.5	....	.5	92.5
712	HUNGARIAN C. M. Hildreth & Son, Lebanon, N. H. July 19, 1915. Barnyard Grass, 270; Catchfly, 90; Crab-grass, 2,160; Green Fox-tail, 90; Lamb's-quarters, 900; Witch Grass, 5,040; Pigweed, 5,040; Ragweed, 90; Smartweeds, 4,050; Three-seeded Mercury, 90; Timothy, 1,170; Yellow Fox-tail, 1,170; Blue Weed, 180; Mustard, 90.	96.0	2.9	.1	1.0	31.0
713	TIMOTHY (XX) C. M. Hildreth & Son, Lebanon, N. H. June 14, 1915. Alsike Clover, 9,675; Cinquefoil, 904; Kentucky Blue Grass, 225; White Clover, 225; Witch Grass, 225; Black-eyed Susan, 453.	98.0	.1	1.3	.6	90.0
714	TIMOTHY (Strictly Prime) C. M. Hildreth & Son, Lebanon, N. H. June 14, 1915. Alsike Clover, 3,842; Red Clover, 2,712; Rugel's Plantain, 904; Smartweeds, 226.	98.3	.1	1.1	.5	90.5

† Above.

SEED EXAMINATION, 1915.—Continued.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination
715	TIMOTHY (<i>Globe</i>) A. H. Barney, Grafton, N. H. June 14, 1915. Kentucky Blue Grass, 1,350; Yarrow, 453; Heal All, 226.	99.7	trace	.1	.2	97.5
716	HUNGARIAN (<i>No. 1 Fancy</i>) (Duplicate of 639.... Henry Evans & Co., Rochester, N. H. June 11, 1915. Green Fox-tail, 90; Lamb's-quarters, 360; Smartweeds, 2,070; Timothy, 270; Ver- vain, 90.	99.0	.6	trace	.4	73.5
717	LAWN GRASS Rand, Ball & King Co., Claremont, N. H. Aug. 25, 1915. Canada Thistle, 450; Smartweeds, 900; Sorrell, 450; Yarrow, 900.	97.5	.2	....	2.3	....
718	ALFALFA H. N. Wells, Newport, N. H. July 1, 1915. Alsike Clover, 450; Green Fox-tail, 180; Red Clover, 1,170; Rib-grass, 1,260.	98.9	.4	.5	.2	92.5
719	TIMOTHY (<i>T 670S3</i>) O. L. & C. A. White, Mountainview, N. H. July 19, 1915. Alsike Clover, 2,475; Cinque- foil, 900; Peppergrass, 225; Red Top, 1,800; Rugel's Plantain, 1,125; Sorrell, 450; White Clover, 675; Black-eyed Susan, 225.	98.6	.2	.7	.5	90.0
720	RED TOP O. L. & C. A. White, Mountainview, N. H. July 19, 1915. Braeted Plantain, 450; Cin- quefoil, 2,700; Dandelion, 900; Peppergrass, 1,350; Rib-grass, 900; Timothy, 900; Yarrow, 450; Juncus spp., 56,700; Unknown, 4,950.	75.2	1.8	trace	23.0	‡
721	HUNGARIAN (<i>80182</i>) O. L. & C. A. White, Mountainview, N. H. July 19, 1915. Lamb's-quarters, 90; Smart- weeds, 630.	99.8	.2	....	....	90.5
722	RED CLOVER (<i>C 70159</i>) O. L. & C. A. White, Mountainview, N. H. July 19, 1915. Alsike Clover, 540; Canada Thistle, 190; Green Fox-tail, 540; Rib-grass, 1,080; Timothy, 720; Yellow Fox-tail, 180.	98.9	.6	.2	.3	94.5
723	RED TOP (<i>7656</i>) Meredith Grain Company, Meredith, N. H. July 19, 1915. Alsike Clover, 2,700; Canada This- tle, 450; Cinquefoil, 116,100; Kentucky Blue Grass, 2,700; Peppergrass, 1,350; Rugel's Plantain, 3,150; Timothy, 20,700; Yarrow, 8,550; Yellow Daisy, 450; Juncus spp., 3,150.	91.5	2.8	1.2	4.5	‡
724	HUNGARIAN Meredith Grain Company, Meredith, N. H. July 19, 1915. Crab-grass, 90; Lamb's-quarters, 90; Old Witch Grass, 90; Pigweed, 90.	99.7	.1	....	.2	83.5
725	JAPANESE MILLET Meredith Grain Company, Meredith, N. H. July 19, 1915. Crab-grass, 90; Old Witch Grass, 90; Ragweed, 1,800; Smartweeds, 90; Yellow Fox-tail, 6,840; Hungarian, 2,250.	93.8	4.2	.8	1.2	82.5
726	ALFALFA (<i>No. 1</i>) H. N. Wells, Newport, N. H. July 19, 1915. Green Fox-tail, 1,260; Old Witch Grass, 180; Unknown, 90.	99.0	.2	....	.8	95.5
727	ALFALFA (<i>No. 2</i>) H. N. Wells, Newport, N. H. July 19, 1915. Green Fox-tail, 720; Lamb's-quarters, 90.	99.3	.2	....	.5	91.0
728	VETCH F. N. Darling, Keene, N. H. July 19, 1915. Corn Cockle, 75.	99.2	.1	....	.7	77.5
729	CORN A. H. Holourk, Manchester, N. H. Aug. 25, 1915.	....	....	....	....	88.0

‡ Stand.

SUMMARY TABLE SHOWING THE KINDS OF FOREIGN SEEDS FOUND IN SAMPLES EXAMINED IN 1915 AND THE NUMBER OF SAMPLES IN WHICH THEY WERE FOUND.

NAMES OF FOREIGN SEED.	Names of Samples Examined.															
	Alfalfa.	Alsike Clover.	Barley.	Crimson Clover.	Kentucky Blue-Grass.	Mammoth Clover.	Millet.	Oats.	Red Clover.	Red Top.	Rye.	Timothy.	Vetch.	Wheat.	White Clover.	Miscellaneous.
Number of Samples Examined.....	7	6	6	1	1	1	16	12	9	8	2	19	2	1	4	1
Alfalfa.....									2							
Alsike Clover.....	1								6			14			4	
Barnyard Grass.....							8	2								
Barley.....								4								
Black Bindweed.....							1	1								
Black-eyed Susan.....									2		2					
Bracted Plantain.....								2	2		1					
Canada Thistle.....					1		1		1						1	1
Canada Blue-Grass.....												1				
Catchfly.....							1	1							2	
Catnip.....												1			2	
Chickweed.....												1				
Cinquefoil.....		1							4		9				2	
Cockle.....				1						1				1		
Crab-Grass.....							7	1								
Dandelion.....							1			1						
Docks.....									2							
Penugreek.....						1						1				
Green Foxtail.....	4	1				1	4	7				1			2	
Juncus spp.....									3			1			2	
Kentucky Blue-Grass.....	1	1										11			2	
Lady's Thumb.....							1	1				1			1	
Lambs'-Quarters.....	2	2					10	1				5			2	
Mayweed.....		2							1							
Mustards.....	1		1				1	3						1		
Oats.....			4							1						
Old Witch Grass.....	1						5		7			2			2	
Pepper Grass.....									3			5			1	
Pigweed.....		1					2		1	1					3	
Prickly Lettuce.....								1								
Ragweed.....							10								1	
Red Clover.....	1	4					1					1			2	
Red Top.....		1						1				3			2	
Rib Grass.....	1	2						7	1						2	
Rugel's Plantain.....								3	3			4			3	
Rye.....				1					1							
Sand-bur Grass.....									1							
Scentless Camomile.....															1	
Self-Heal.....		7										1				
Smartweeds.....							15		2	2		1				1
Sorrel.....		2						1	3	1		3			4	1
St. John's Wort.....									2							
Sun Spurge.....									2							
Sweet Melilot.....		1														
Timothy.....	1	6					3		6	4	1				3	
Unknown.....	1						2	1	1	2						
Yarrow.....							1					1				
Wheat.....			3					7								
White Clover.....		4							1			7				
Wild Sunflower.....								1								
Yarrow.....										5		1				
Yellow Foxtail.....							12	2		1						
Yellow Trefoil.....		3							2						2	

SUMMARY TABLE SHOWING RESULTS OF EXAMINATION OF SAMPLES OF SEED OBTAINED BY THE COLLECTOR FOR THE YEAR 1915.

No.	Kind of Seed, Brand, Name and Address of Seller.	Percent Purity		Percent Germination	
		Found	Guaran- teed	Found	Guaran- teed
659	ALFALFA (<i>Pine Tree, 87524</i>)..... R. L. Costello, Portsmouth, N. H.	100.0	99.0	92.0	92.0
687	ALFALFA (<i>White Mountain</i>)..... Holbrook Grocery Co., Keene, N. H.	99.9	99.5	91.0	95.0
641	ALSIKE CLOVER (<i>Eureka</i>)..... Henry Evans & Co., Rochester, N. H.	99.1	98.5	89.0	90.0
646	ALSIKE CLOVER..... C. L. Jenness, Dover, N. H.	97.9	97.0	94.5	93.0
669	ALSIKE CLOVER (<i>Ace</i>)..... Manchester Hardware Co., Manchester, N. H.	94.5	95.0	90.5	90.0
694	ALSIKE CLOVER (<i>86449, Old Home</i>)..... Abbott Grocery Co., Keene, N. H.	90.7	88.7	94.5	94.0
637	BARLEY (<i>Chevalier</i>)..... Henry Evans & Co., Rochester, N. H.	97.5	98.0	97.0	95.0
651	BARLEY (<i>Montana</i>)..... C. L. Jenness, Dover, N. H.	96.2	....	96.5	....
685	BARLEY (<i>White Mountain</i>)..... Holbrook Grocery Co., Keene, N. H.	99.1	99.0	98.5	93.0
688	BARLEY (<i>White Mountain</i>)..... Holbrook Grocery Co., Keene, N. H.	96.8	99.0	96.5	95.0
660	CRIMSON CLOVER..... R. L. Costello, Portsmouth, N. H.	99.1	98.0	96.0	93.0
652	CORN (Red Cob Ensilage)..... C. L. Jenness, Dover, N. H.	97.9	....	96.0	....
653	CORN (<i>Leaming</i>)..... C. L. Jenness, Dover, N. H.	98.6	....	90.5	....
654	CORN (<i>Sanford White</i>)..... C. L. Jenness, Dover, N. H.	100.0	....	91.0	....
679	CORN (<i>Leaming</i>)..... Batchelder Bros., Tilton, N. H.	97.1	....	96.0	....
680	CORN (<i>Mastodon</i>)..... Batchelder Bros., Tilton, N. H.	99.4	....	92.0	....
681	CORN (<i>Southern White</i>)..... O. B. Tilton, Nashua, N. H.	98.5	....	98.0	....
682	CORN (<i>Longfellow</i>)..... O. B. Tilton, Nashua, N. H.	100.0	....	99.0	....
702	CORN (<i>Eureka White</i>)..... Magowen Bros., Claremont, N. H.	97.8	99.5	98.0	....
703	CORN (<i>Cuban Giant</i>)..... Bacon Bros., Henniker, N. H.	100.0	....	97.0	....
706	CORN (<i>Early Triumph</i>)..... P. R. Hatton, Lebanon, N. H.	99.3	90.0	99.0	95.0
707	CORN (<i>Early Canada</i>)..... P. R. Hatton, Lebanon, N. H.	100.0	99.0	96.0	90.0
708	CORN (<i>Pride of the North</i>)..... P. R. Hatton, Lebanon, N. H.	99.3	....	98.0	....
709	CORN (<i>Sanford</i>)..... P. R. Hatton, Lebanon, N. H.	99.2	99.0	98.0	93.0
655	CORN (<i>Golden Bantam</i>)..... C. L. Jenness, Dover, N. H.	100.0	....	94.0	....
650	KENTUCKY BLUE GRASS (<i>45682</i>)..... C. L. Jenness, Dover, N. H.	95.5	81.0	....	75.0
678	MAMMOTH CLOVER (<i>White Mountain</i>)..... Batchelder Bros., Tilton, N. H.	99.0	99.5	92.5	93.0
639	HUNGARIAN MILLET (<i>No. 1 Fancy</i>)..... Henry Evans & Co., Rochester, N. H.	98.5	98.0	73.0	90.0
648	HUNGARIAN MILLET (<i>80182</i>)..... C. L. Jenness, Dover, N. H.	99.4	98.0	93.5	94.0
663	HUNGARIAN MILLET (<i>H 81090</i>)..... R. L. Costello, Portsmouth, N. H.	99.2	98.0	94.0	92.0
671	HUNGARIAN MILLET (<i>81090</i>)..... Manchester Hardware Co., Manchester, N. H.	99.2	96.5	92.0	88.0

SEED EXAMINATION, 1915.—Continued.

No.	Kind of Seed, Brand, Name and Address of Seller.	Percent Purity		Percent Germination	
		Found	Guaranteed	Found	Guaranteed
699	HUNGARIAN MILLET (80187)..... Abbott Grocery Co., Keene, N. H.	98.3	98.0	92.5	89.0
711	HUNGARIAN MILLET (H 80204)..... P. R. Hatton, Lebanon, N. H.	99.0	98.0	92.5	90.0
712	HUNGARIAN MILLET..... C. M. Hildreth & Son, Lebanon, N. H.	96.0	97.0	31.0	90.0
716	HUNGARIAN MILLET (No. 1 Fancy) (Duplicate of No. 639. Henry Evans & Co., Rochester, N. H.	99.0	98.0	73.5	90.0
721	HUNGARIAN MILLET (80182)..... O. L. & C. A. White, Mountainview, N. H.	99.8	98.0	90.5	86.0
724	HUNGARIAN MILLET (X)..... Meredith Grain Co., Meredith, N. H.	99.7	98.0	83.5	95.0
698	GERMAN MILLET..... Abbott Grocery Co., Keene, N. H.	99.5	98.5	92.0	90.5
638	JAPANESE MILLET..... Henry Evans & Co., Rochester, N. H.	93.7	94.0	86.0	80.0
664	JAPANESE MILLET (81534)..... R. L. Costello, Portsmouth, N. H.	97.5	98.0	93.5	96.0
670	JAPANESE MILLET..... Manchester Hardware Co., Manchester, N. H.	99.1	99.0	92.0	90.0
696	JAPANESE MILLET (Mastif, 80196)..... Abbott Grocery Co., Keene, N. H.	98.8	98.0	95.5	92.0
725	JAPANESE MILLET..... Meredith Grain Co., Meredith, N. H.	93.8	94.0	82.5	95.0
666	OATS..... Manchester Hardware Co., Manchester, N. H.	99.3	99.0	96.5	98.0
675	OATS (White Mountain)..... F. H. Moore Inc., Laconia, N. H.	99.5	99.0	98.5	97.0
686	OATS (White Mountain)..... Holbrook Grocery Co., Keene, N. H.	99.8	99.0	98.0	97.0
642	RED CLOVER (Eureka)..... Henry Evans & Co., Rochester, N. H.	99.4	99.5	94.5	95.0
647	RED CLOVER..... C. L. Jenness, Dover, N. H.	98.5	98.0	96.0	94.0
658	RED CLOVER (Kaiser C., 70115)..... R. L. Costello, Portsmouth, N. H.	98.0	96.0	92.5	93.0
668	RED CLOVER (Ace)..... Manchester Hardware Co., Manchester, N. H.	99.1	98.0	91.5	92.0
689	RED CLOVER (White Mountain)..... Holbrook Grocery Co., Keene, N. H.	99.3	99.5	95.5	95.0
710	RED CLOVER (Pan-American)..... C. M. Hildreth & Son, Lebanon, N. H.	98.0	98.0	95.5	90.0
722	RED CLOVER (C. 70159)..... O. L. & C. A. White, Mountainview, N. H.	98.9	96.6	94.5	92.0
683	RED TOP (White Mountain)..... Holbrook Grocery Co., Keene, N. H.	97.0	93.0	†	90.0
690	RED TOP (XXX)..... Goodnow Bros., E. Jaffrey, N. H.	87.2	86.0	‡	90.0
700	RED TOP (Ace)..... John B. Varick & Co., Manchester, N. H.	93.2	90.0	†	94.0
701	RED TOP (White Mountain)..... H. W. Taylor, Hinsdale, N. H.	97.1	93.0	†	90.0
720	RED TOP (X)..... O. L. & C. A. White, Mountainview, N. H.	75.2	....	‡	....
723	RED TOP (6756)..... Meredith Grain Co., Meredith, N. H.	91.5	84.0	‡	....
665	RVE..... R. L. Costello, Portsmouth, N. H.	99.5	....	96.0	....
643	TIMOTHY (Pan-American)..... Henry Evans & Co., Rochester, N. H.	99.5	99.5	92.5	95.0
644	TIMOTHY (Gold Medal)..... Henry Evans & Co., Rochester, N. H.	99.7	99.7	94.0	95.0
649	TIMOTHY (Pine Tree)..... C. L. Jenness, Dover, N. H.	99.8	99.5	94.5	95.0

† Above.

‡ Stand.

SEED EXAMINATION, 1915.—Continued.

No.	Kind of Seed, Brand, Name and Address of Seller.	Percent Purity		Percent Germination	
		Found	Guaranteed	Found	Guaranteed
661	TIMOTHY (<i>Bison 67121</i>)..... R. L. Costello, Portsmouth, N. H.	98.6	98.0	92.5	92.0
662	TIMOTHY (<i>Pine Tree, 65616</i>)..... R. L. Costello, Portsmouth, N. H.	99.5	99.5	95.5	96.0
672	TIMOTHY (<i>Pine Tree, 67310</i>)..... Manchester Hardware Co., Manchester, N. H.	99.7	99.5	95.5	95.0
676	TIMOTHY (<i>White Mountain</i>)..... F. H. Moore Inc., Laconia, N. H.	99.7	99.6	96.0	97.0
677	TIMOTHY (<i>Liberty</i>)..... F. H. Moore Inc., Laconia, N. H.	99.4	99.5	93.5	94.0
684	TIMOTHY (<i>White Mountain</i>)..... Holbrook Grocery Co., Keene, N. H.	99.6	99.6	94.0	97.0
695	TIMOTHY (<i>67240, Old Home</i>)..... Abbott Grocery Co., Keene, N. H.	99.8	98.0	91.0	92.0
697	TIMOTHY (<i>Mastiff, 66665</i>)..... Abbott Grocery Co., Keene, N. H.	99.6	99.5	94.0	95.0
713	TIMOTHY (<i>XX</i>)..... C. M. Hildreth & Son, Lebanon, N. H.	98.0	97.0	90.0	92.0
714	TIMOTHY (<i>Strictly Prime</i>)..... C. M. Hildreth & Son, Lebanon, N. H.	98.3	98.0	90.5	90.0
715	TIMOTHY (<i>Globe</i>)..... A. H. Barney, Grafton, N. H.	99.7	99.7	97.5	99.0
719	TIMOTHY (<i>T 67083</i>)..... O. L. & C. A. White, Mountainview, N. H.	98.6	98.0	90.0	92.0
656	VETCH..... R. L. Costello, Portsmouth, N. H.	99.7	99.0	87.0	84.0
640	WHITE CLOVER (<i>Choice</i>)..... Henry Evans & Co., Rochester, N. H.	97.8	90.0	90.0	90.0
657	WHITE CLOVER (<i>88538</i>)..... R. L. Costello, Portsmouth, N. H.	79.2	91.0	87.5	90.0
667	WHITE CLOVER (<i>30334</i>)..... Manchester Hardware Co., Manchester, N. H.	92.1	95.0	89.0	90.0
704	WHITE CLOVER (<i>88538</i>) (Duplicate of No. 657).. R. L. Costello, Portsmouth, N. H.	82.0	91.0	88.5	90.0

From the tables on the three pages just preceding it will be noted that 68 of the 80 samples collected were guaranteed for purity and 66 for germination. In other words, 85% of the seed represented by the samples was sold according to the law as regards purity and 82.5% as regards germination. These percentages are higher than last year when they stood at 80 and 67%, respectively.

Of the total 68 samples which were guaranteed for purity, 52 of them or 77% were up to the guarantee. The remaining 16 samples ranged from .1% to 12.8% below the guarantee.

Of the 66 samples guaranteed for germination, 37 or 56% tested up to or above the guarantee. The remaining 29 samples tested from .5% to 59% below the guarantee.

Among the seeds tested this year, alfalfa, alsike clover, oats, red clover, and timothy, were on the average above the standard per cent. of purity, while barley, the millets, redtop, and white clover were on the average below the standard per cent.

As regards the per cent. of germination of this year's seeds all of them, with two exceptions, were, on the average, up to or above the standard per cent. The millets averaged just a little below the standard on account of the low test of several samples of old seed which were collected, while the average of the redtop was materially lowered by one sample of home-grown seed which tested only 15%.

There was found on the market this year one lot of white clover seed which was about 15% below the standard of purity and which contained at least sixteen different kinds of weed and other grass seeds.

LABELING.

The law does not apply to the common five and ten-cent packages of garden and flower seeds. Only seeds sold in bulk or in packages of one pound or more are subject to the provisions of the law and are required to be accompanied by a guarantee stating their percentage of purity and vitality.

The guarantee or label may be of any form desired by the seller of the seeds, as a tag, sticker, or direct brand upon the container. It must, however, be plainly written or printed, and placed distinctly visible to the purchaser. Each dealer will provide his own labels.

TAKING OF SAMPLES.

To secure a fair average sample of a lot or bulk, take small quantities from all of the bags or from different parts of any particular bulk. Mix thoroughly and take out the sample to

be inspected. When the seeds are in bags or large bins, the use of a grain sampler is most convenient, since this will insure getting seeds from the top, middle, and bottom alike. Since the report of the analysis is based upon the nature of the sample inspected, it is important that the sample be carefully taken.

SIZE AND AMOUNTS OF SAMPLES.

The size and amount of the samples necessary for a test will depend upon the size and weight of the seeds. About one half ounce or a tablespoonful of the smaller grass and vegetable seeds, like alsike and white clover, redtop, lettuce, onions, radish, turnip, etc.; about one ounce or two tablespoonfuls of the larger seeds, like timothy, millet, red clover, alfalfa, rape, etc.; and about four ounces or a small cupful of the cereal grains or vegetable seeds, like oats, barley, corn, peas, beans, etc., should be sent.

TESTS AND EXAMINATIONS.

Section 2 of the law states the provisions under which the tests and analyses shall be made. The Commissioner of Agriculture has appointed F. W. Taylor, Agronomist of the Experiment Station, as the regular agent for making all tests and analyses in this state. The sellers or dealers who desire to base their guarantees upon tests made by themselves or their agents must first secure the approval of the Commissioner of Agriculture of the methods to be used in making the tests, and of the person who is to conduct them.

Although the law makes no provision for the expenses of the seed tests, the Department of Agriculture has arranged with the Experiment Station to have the tests made **free of charge** to all dealers and farmers resident in the state.

SENDING OF SAMPLES.

Samples sent to the Experiment Station for testing should be enclosed in a strong paper envelope and securely fastened. They should not be sent in bottles or glass jars owing to the danger of breakage. When a number of samples are to be sent they should be put up securely in a single package and forwarded either by parcel post or by express. Each sample sent in should be marked as follows:

Name and address of sender.

Date of sending.

Kind of seed.

Brand name (if any), and number of package.

Purity or germination test desired (one or both).

Write a letter stating the number and kind of samples sent so that their receipt may be promptly acknowledged.

Address all samples and communications regarding the same to F. W. Taylor, Experiment Station, Durham, N. H.

STANDARDS.

The law does not attempt to fix any standards as to purity and vitality, but for the information of those who may desire to know what may be considered as "equitable standards" the following table, offered by the U. S. Department of Agriculture, and based upon investigations made by that department, is given.

STANDARDS OF PURITY AND GERMINATION OF AGRICULTURAL SEEDS.

Seed.	Purity %	Germination %	Seed.	Purity %	Germination %
Alfalfa,	98	85—90	Kafir corn,	98	85—90
Asparagus,	99	80—85	Melon,	99	85—90
Barley,	99	90—95	Milletts,	99	85—90
Beans,	99	90—95	Mustard,	99	90—95
Beets,	99	*150	Oats,	99	90—95
Blue grass, Canadian,	90	45—50	Okra,	99	80—85
Blue grass, Kentucky,	90	45—50	Onion,	99	80—85
Brome, awnless,	90	75—80	Parsley,	99	70—75
Buckwheat,	99	90—95	Parsnip,	95	70—75
Cabbage,	99	90—95	Peas,	99	93—98
Carrot,	95	80—85	Pumpkins,	99	85—90
Cauliflower,	99	80—85	Radish,	99	90—95
Celery,	98	60—65	Rape,	99	90—95
Clover, alsike,	95	75—80	Redtop,	95	75—80
Clover, crimson,	98	85—90	Rye,	99	90—95
Clover, red,	98	85—90	Salsify,	98	75—80
Clover, white,	95	75—80	Sorghum,	98	85—90
Collard,	99	90—95	Spinach,	99	80—95
Corn, field or ensilage,	99	90—95	Spurry,	99	85—90
Corn, sweet,	99	85—90	Squash,	99	85—90
Cowpea,	99	85—90	Timothy,	98	85—90
Cucumber,	99	85—90	Tomato,	98	85—90
Eggplant,	99	75—80	Turnip,	99	90—95
Fescue, meadow,	95	85—90	Tobacco,	98	75—80
Lettuce,	99	85—90	Wheat,	99	90—95

* Each beet fruit or "ball" is likely to contain from 1 to 7 seeds. One hundred balls should yield at least 150 sprouts.

OTHER INFORMATION.

Other publications on the subject of seed testing are as follows:

Circulars Nos. 34 and 35, U. S. Department of Agriculture, Washington, D. C.

Bulletin No. S-I, Canadian Department of Agriculture, Ottawa, Can.

Bulletin No. 146, Vermont Experiment Station, Burlington, Vt.

Circular No. 4, Wisconsin Experiment Station, Madison, Wis.

Bulletin No. 115, Iowa Experiment Station, Ames, Iowa.

Bulletin No. 110, Nebraska Experiment Station, Lincoln, Neb.

Seed Bulletin No. 1, North Dakota Experiment Station, Fargo, N. D.

Bulletin No. 83, Bureau of Plant Industry, Washington, D. C.

Bulletin No. 270, Michigan Experiment Station, East Lansing, Mich.

Bulletin No. 394, New York Experiment Station, Geneva, N. Y.

Bulletin No. 148, Kentucky Experiment Station, Lexington, Ky.

Bulletin No. 111, Bureau of Plant Industry, Washington, D. C.

Farmers' Bulletin No. 260, Division of Publications, Washington, D. C.

Bulletin No. 189, Maryland Experiment Station, College Park, Md.

Bulletin No. 147, Minnesota Experiment Station, St. Paul, Minn.

Bulletin No. 312, Cornell University, Ithaca, N. Y.

Extension Bulletin Nos. 24 and 39, University of Minnesota, St. Paul, Minn.

Official Inspection No. 46, Maine Experiment Station, Orono, Me.

Bulletin No. 266, New Jersey Experiment Station, New Brunswick, N. J.

Twenty-fourth Annual Report, Massachusetts Experiment Station, Jan., 1912, Amherst, Mass.

Twenty-fifth Annual Report, North Dakota Experiment Station, Feb., 1915, Fargo, N. D.

Bulletin, Oct., 1912, North Carolina Department of Agriculture, Raleigh, N. C.



