

Leaflet N. (Revised).

Soil From Alfalfa Fields

New York Agricultural Experiment Station
Geneva, N. Y.

1912

In over 100 fields which have been tested, in all parts of the State, **Bacteria** only about one out of five contained **needed for** the bacteria which were necessary **alfalfa.** in growing a successful crop of alfalfa. The same studies showed that this lack could be supplied by the application of 100 pounds or more of the soil from a successful alfalfa field.

These bacteria are necessary to the fixation of the free nitrogen of the air and their presence is indicated by the formation of nodules on the small roots of the alfalfa. These nodules often appear on the roots by the time the third leaf is forming on the young plants.

The ability of the bacteria to grow **Spread of** in the soil is not understood but **bacteria.** within the nodules they multiply rapidly. Later in the season many of these nodules break up and the bacteria in them get into the soil. In this way soil in which inoculated alfalfa is growing increases rapidly its content of these legume bacteria and may be used for inoculating other fields within a short time. Some idea of its usefulness for inoculating may be gained by noting the abundance of nodules on the growing alfalfa during the first two seasons. After that time the root systems are so deep that it is difficult to make a proper examination unless the mechanical condition of the soil is especially favorable. **In practically all cases soil should be in condition to use for inoculating purposes by the beginning of the second season.**

In preparing the soil it has been
Preparation of soil. our practice to first remove an inch or two of the surface, largely in getting rid of the tops of the plants. A spade length of soil was then thrown up and allowed to dry sufficiently to pass readily through an ordinary mason's sieve. The sifted soil was placed in bags and shipped. A temporary cover was placed over the pile of unbagged soil to protect from rain and excessive drying.

Cost. The soil itself does not represent much loss, as a space 25 feet square will supply 300 sacks and the next plowing will return the field to nearly its original appearance. The labor of preparing the soil and filling the sacks is worth 50 to 75 cents per sack in small amounts. The expense of hauling to the railroad will vary with the distance.

Caution. The soil may be the carrier of dodder and undesirable weeds though in the past complaints of trouble from this source have been surprisingly scarce.

Local supply. In the past this Experiment Station has supplied a bag of soil to any farmer who has been desirous of trying alfalfa, but this demand has reached such proportions as to become a serious tax upon the institution. In former years this service was necessary and was given gladly, but now there are literally hundreds of alfalfa fields in this State which are just as valuable for the purpose of furnishing inoculating soil as the field at the Station. They are even more valuable to the individual

farmer because by driving to the field of his neighbor he can get the soil at the time he desires it instead of submitting to vexatious delays which occur with freight and at the same time he can profit by the experience of that fellow farmer who has been growing alfalfa under his own local conditions. The value of this latter item should not be underestimated.

The following is a partial list of
Where to get soil. the persons to whom we have furnished soil for the purpose of starting alfalfa fields and who now have inoculated soil and are willing to assist their neighbors in the same way. This list is by no means complete as there are farmers in practically every agricultural community who are just as well equipped for furnishing soil as any of those in the list. This list was compiled before the snow was off and probably in some cases the fields will be found badly winter-killed. The bacteria are not killed with the plants and we once successfully supplied a large number of experimental plats from a field in which practically every plant had been killed during the winter. By obtaining your supply of soil from some of your neighbors whenever possible you will not only lighten the burdens placed upon this Station but you will make it easier for us to assist your fellow farmer who is less fortunately situated than yourself.

Albany.—Chas. H. Johnson, Albany Orphan Asylum, Albany.

Allegany.—Geo. P. Gates, Whitney Crossing, farm Garwoods,

T. C. Kane, Scio R D 1,
Archie Lyon, Black Creek, R D 3,
W. A. Swartz, Fillmore R D 2; farm Allen,
S. A. Williams, Cuba R D 1; farm West Clarks-
ville.

Broome.—Binghamton State Hospital, Bingham-
ton,

Wallace A. Cornell, Union R D 1,
Chas. Hall, Chenango Forks,
H. H. Howland, Center Lisle,
W. C. Lyon, Klimer Bld., Binghamton. Farm
Ouaqauqa,

I. H. Paige, Glen Castle,
O. E. Wilson, Binghamton, R D 5, farm Cho-
conut Center.

Cattaraugus.—F. C. Burlingame, Hinsdale RD 1

Hon. E. G. Dusenbury, Portville,
Elliott C. Mighells, Randolph R D 1,
L. H. Myers, Conewango Valley, R D 1,
C. B. Norton, Great Valley R D 1,
Lincoln A. Park, Dayton R D 1; farm Wesley,
Joseph Schuppenhauer, Little Valley R D 1,
farm Mansfield.

Cayuga.—John T. Bryan, Auburn, Box 302;
farm toward Sennett,

J. H. Mason, Martville R D 53,

Chautauqua.—H. B. Clothier, Silver Creek
R D 4,

Fred W. Eddy, Ashville R D 66; farm Cherry
Hill Corners,

W. G. Ireland, Niobe, R D 62,

W. E. Wallace, N. Clymer, R D 60, farm near
Hubbard's Corners,

T. B. Winchester, Jamestown, R D 77, farm
Lakewood.

Chemung.—George Brand, Elmira; farm Southport,

Thos. Motchman, Pine City R D 2, farm Dutch Hill,

Grant Shappee, Horseheads R D 2,

G. M. Straitor, Chemung,

Swain Bros., Chemung, R D 1,

Chet Wilcox, Wellsburg R D 1.

Chenango.—Geo. A. Adams, N. Norwich,

M. D. Firman, North Norwich,

L. J. Lewis, So. New Berlin, R D 2, farm Holmesville,

J. S. Shattuck, Norwich R D 4,

Chas. G. Smith, Bainbridge, R D 3,

Tarbell Farms, Smithville Flats,

E. P. Tobey, Smyrna,

L. E. Wheeler, So. New Berlin R D 1,

P. S. Young, Greene R D 2

Clinton.—Dr. Gilbert Dare, Morrisonville,

A. S. Lewis, Ellenburg Depot.

Columbia.—E. W. Mitchell, Stuyvesant Falls,

J. Van Ness Philip, Claverack.

Cortland.—Frank G. Carter, Marathon R D 1;

farm near Texas Valley,

G. W. Downing, Scott,

J. A. Leach, Cortland R D 7.

Delaware.—F. E. Adams, Hobart, R D 1,

Hector W. Cowan, Hobart,

E. H. Dimmick, Halcottville,

DeWitt Hammond, Denver; farm Roxbury,

Albert Holley, Walton R D 1; farm East Walton,

Arthur Holley, Walton R D 3,

E. W. Hunt, Treadwell,

Ellis Knapp, North Franklin; farm near Ouleout,

- Jas. McAuley, Davenport,
 J. H. McClelland, Hobart, R D 1
 S. W. Rich, Hobart, R D 1,
 Mrs. Dell M. Simonson, Hobart,
 J. B. Stadel, Cook's Falls.
 Peter Tompkins, Cook's Falls.
- Dutchess.**—H. V. D. Reed, Amenia Union,
 Archibald Rogers, Hyde Park.
- Erie.**—Loran N. Baker, Springville,
 Myron H. Clark, Elma,
 Stuart R. Mann, Derby,
 Will P. Smith, Sardinia, R D 1,
 John H. Stocker, Angola, R D 1.
- Essex.**—J. P. Ord, Westport, Bessboro Farm.
- Franklin.**—Dr. P. F. Dalphin, Malone,
 H. H. Hawley, Malone, farm Mountain View.
- Fulton.**—L. M. Lee, Broadalbin R D 1.
- Genesee.**—Martin Mulner, Darien Center,
 F. D. Ross, Corfu, R D 8,
 John A. Groff, Darien Center.
- Herkimer.**—T. B. Nicholas, Frankfort R D 2;
 farm Frankfort Center.
- Jefferson.**—Herbert H. Greene, Copenhagen,
 R D 3,
 A. D. VanAllen, Dexter; farm near Burrs Mills.
- Lewis.**—H. D. Ross & Sons, Lowville, R D 5.
- Livingston.**—C. H. Whitney, Retsof, farm near
 Craigs.
- Madison.**—A. L. Brigham, Solsville,
 D. P. Brown, Morrisville; farm Morrisville
 Station,
 Lamb & Langworthy, East Hamilton, farm
 Hubbardsville.
 F. A. Miller, Earlville R D 2; farm near Ran-
 dallsville,

- A. M. Smith, Morrisville R D 1,
 W. J. Smith & Sons, Sheds,
 E. E. Thayer, Hubbardsville; farm N. Brook-
 field.
- Monroe.**—Geo. R. Leonard Sr., Penfield.
 Dr. Geo. S. Price, Fairport,
 E. T. Robbins, Brighton, R D 1,
 John Sherman, Irondequoit, R D 1,
- Nassau.**—R. C. Colyer, Hicksville R D 1; farm
 Woodbury.
 Herman Kolkebeck, Farmingdale.
- Niagara.**—Floyd Cothran, Lockport, R D 8.
- Oneida.**—H. W. Bushnell, Stittsville,
 W. C. Perry, Durhamville R D 2; farm Stacey
 Basin.
- Ontario.**—C. E. Peachy, Oaks Corners,
 Fayette Taylor, Geneva R D 1,
 O. F. Wheeler, E. Bloomfield, R D 1.
- Orange.**—C. R. Bull & Son, Oxford Depot,
 Ebenezer Bull, Campbell Hall R D 1; farm
 Hamptonburgh,
 J. A. D. S. Findlay, Salisbury Mill,
 Jesse Hulse, Washingtonville,
 F. A. Kattmann, Montgomery, Sunnybrook
 farm,
 John M. Runyon, West Town,
 Mathew Smith, Goshen, Box 35,
 Dr. J. H. Wood, Warwick; farm near Eden-
 ville.
- Orleans.**—Jas. Austin & Son, Morton,
 Geo. F. Springle, Albion R D 1.
- Oswego.**—Geo. E. Bullis, Oswego, R D 7; farm
 north of Hannibal,
 O. A. Hessel, Demster R D 1,
 D. J. Hollis, Lacona,
 F. B. Loren, Central Square, R D 2; farm
 near Caughdenoy.

- G. C. Mattison, Altmar R D 2,
Henry Stevens & Son, Lacona.
- Otsego.**—H. T. Basinger, Cooperstown,
F. E. Hunt, Unadilla,
Lester R. Johnson, Richfield Springs R D 2;
farm Springfield,
G. C. Rogers, Edmeston, R D 2,
Melvin Seeger, Oneonta R D 1; farm Milford
Center,
Fred Taber, Phoenix Mills.
- Rensselaer.**—Walter A. Wood Jr., Hoosick
Falls.
- Rockland.**—Lawrence Termansen, Stony Point.
- Schenectady.**—A. W. Johnson, Rosendale Roap
R D 1,
Frank E. Welles, Geneseo, farm Glenville.
- Schuyler.**—Wm. Sheppard, Watkins, R D 3.
- Seneca.**—G. B. Atkins, Ovid Center,
Chas. Roeger, Waterloo, Box 490,
Henry Seidel, Waterloo R D 3.
- Steuben.**—Fay Bennett, Hornell R D 4; farm
near Howard,
S. A. Cady, Troupsburg R D 2,
S. B. Lyon, Hammondsport R D 2; farm Pult-
ney,
J. J. Mattice, Cohocton R D 2,
D. L. McCarthy, Addison,
Geo. E. Northrup, Seeley Creek R D 1,
E. R. Wilson, Corning R D 4; farm Pine Hill.
- St. Lawrence.**—A. G. Hall, Gouverneur R D 1.
- Suffolk.**—Wm. Griswold, Southold,
C. R. Hunt, Huntington, R D 1,
L. I. R. R. Exp. Station, Medford,
W. T. Rogers, Bridgehampton,
Morgan Topping, Wainscott.
- Sullivan.**—J. E. & F. M. Decker, Livingston
Manor.

- Floyd A. Durland, Hurleyville,
 E. B. Ferdon, Roscoe,
 Ray Hardie, Roscoe,
 J. P. Johnson, Livingston Manor,
 Walter W. Lewis, Dahlia,
 Henry N. Weyrauch, Liberty.
- Tioga.**—D. O. Blackburn, Lockwood R D 2,
 Fred A. Blewer, Owego R D 3; farm Wiltonville,
 W. A. Goodfellow, Newark Valley,
 I. S. Hart, Sayre, Pa., farm Candor,
 F. L. Howard, Waverly,
 Fred Marsh, Richford, R D 2,
 Edward H. Miller, Owego,
 C. W. Noteware, So. Appalachin,
 C. A. Park, Nichols, farm Litchfield,
 F. Roulet, Newark Valley,
 H. L. Swayze, North Spencer,
 A. W. Wood, Owego R D 3,
 F. Yearsley, Nichols.
- Tompkins.**—E. S. Hill & Son, Freeville R D 17.
- Ulster.**—Jules Breuchaud, Brown Station,
 Bert F. Malcom, Highland R D 1; farm near
 Clintondale,
 Sylvanus VanAken, Port Ewen, Box 116.
- Warren.**—Mrs. Chas. Knoblauch, Bolton Land-
 ing; farm North Bolton,
 Silas H. Paine, Silver Bay.
- Washington.**—J. D. Coffin, Thomson,
 Jas. G. McInery, Buskirk Bridge R D 1,
 A. H. Snyder, Fort Edward, farm Moreau.
- Wayne.**—E. L. Davenport, North Rose, farm
 Resort,
 W. H. Kelley, Newark, farm Wayne Center.
- Wyoming.**—J. J. Bliss, Bliss,
 C. S. Hampton, Portageville.
- Yates.**—A. D. Foster, Rushville R D 22.