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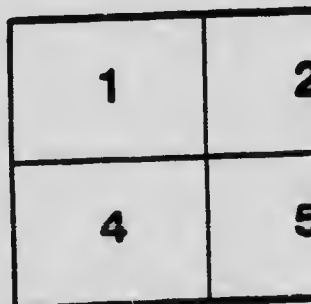
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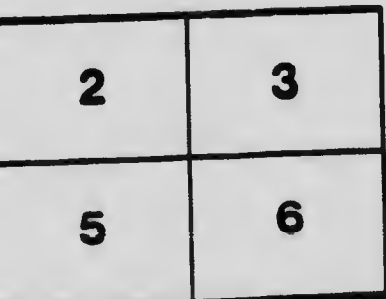
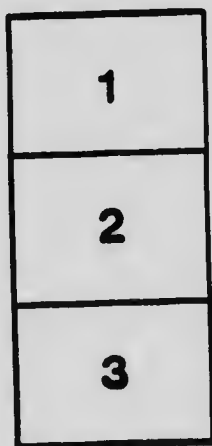
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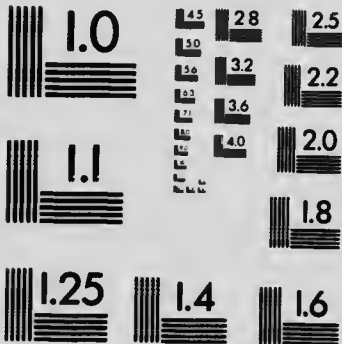
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MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



MAXIMUM CROPS---1917

BY

W. L. GRAHAM, B.S.A., *Assistant Field Husbandman.*

In other words, "The greatest yield on the greatest area which we can properly sow, cultivate and harvest," should, in an especial way, be our motto and watchword for 1917.

Our part of the task is to provide nature with the most favourable medium in which to carry on her work of germination and growth. To do this, we must pay earnest attention to devote our very best effort to all factors affecting crop yields.

We must, therefore, look ahead and plan. Each part of our equipment of seeds, machinery and power demands its share of attention. Then, with everything in readiness, with the spirit to "do our bit" as well as we possibly can and better than ever before, we shall be prepared to accomplish our aim.

To do the best work all must be in readiness for the rush. We are ready for the rush when—

POWER.

When the horses are in condition—well fed, exercised, hardy, mated, harnessed properly; **use three, four or five or even six horse teams where possible.**

IMPLEMENTS.

When the implements are repaired; repair parts on hand for emergencies; **wider, larger, new machines set up. Don't forget the grease and oil.**

SEED.

When the seed grain is **cleaned, graded, and bagged**, you should treat it for **smut**. The cost is low; it takes little time and results in larger yields.

Always treat wheat and oats. Do it this way:—

Bluestone solution.—5 pounds commercial blue stone to 50 Imperial gallons of water.

Formalin solution.—1 pound formaldehyde (normal strength) to 40 Imperial gallons of water.

Steeping method.—In bluestone solution, immerse grain not less than two minutes—not more than three minutes. In formaldehyde solution, not less than four minutes and not more than five minutes.

DOMINION EXPERIMENTAL FARMS.

J. H. GRISDALE, B.Agr.,
Director.

W. L. GRAHAM, B.S.A.
Assistant Field Husbandman.

SPECIAL CIRCULAR No. 2.

17165b



Sprinkling method.—Heap grain on clean floor. Sprinkle either solution over it with broom or can; mix well; 40 gallons will treat 40 to 50 bushels of grain. When using bluestone, spread out to dry at once after mixing; form grain into pile when using formaldehyde, and cover three hours with bags—then spread out and dry.

Moist grain cannot feed the drill as freely as dry grain; **adjust your drill.**

NOTE.—For detailed information on subject, ask for Exhibition Circular 24 or Experimental Farms Bulletin 73, Publications Branch, Ottawa, Ontario.

Suitable seed corn is scarce.—Secure a supply at once. **Get it on the cob**, if possible, so that you can select it.

We know of limited supplies and, upon request, would be glad to give you particulars.

Canadian-grown clover, alfalfa, and root seed is best.—This year there is a plentiful supply.

Good seed is (a) of strong vitality, (b) free from noxious weed seeds.

You can test its vitality at home. It is interesting to note results. To the eye, a sample of seed may appear good. A test may disappoint you. Try it this way:—

Count out a hundred kernels the run of the grain, sow in some of your own soil in a shallow box placed in a sunny window and keep at a comfortable living-room temperature. Keep soil damp but not wet, note the growth for two weeks. If only part of the seeds germinate or if the plants grow very slowly, it will be necessary to sow proportionally more seed to the acre.

Is it free from weeds?—Have a test made **FREE OF CHARGE** by sending a representative sample to the **Dominion Government Seed Laboratories, Ottawa.** A report of purity and vitality of the seed will be returned to you.

The right amount of seed per acre is very important. No set amount can be stated, suited to all conditions. Following rates of seeding are a guide:—

FOR ONE ACRE

Corn for ensilage, 20 to 30 pounds.

Corn for grain, 15 to 20 pounds.

Swedes (drills), 2 to 4 pounds.

Mangels, 6 to 10 pounds.

Wheat, 1½ to 1¾ bushels.

Barley, 2 to 2½ bushels.

Rye, ¾ to 1½ bushels.

Buckwheat, ¾ to 1½ bushels.

Oats (depending on size), 2 to 3 bushels.

Peas (depending on size), 2½ to 3 bushels.

Peas and oats (mixed) for grain (oats, 2 to 2½ bushels; peas, 1 to 1½ bushels).

Peas and oats for green feed or hay (equal parts by weight at the rate of 3 to 4 bushels per acre).

Alfalfa, 20 to 30 pounds.

Clovers and grasses, 15 to 20 pounds (in varying proportion according to condition of soil, location, cropping system and purpose).

Potatoes (according to size), 12 to 20 bushels.

SEEDING HINTS FOR BEST RESULTS.

GRAIN.

Fall-ploughed sod and fall-diseed or fall-ploughed root, corn, and potato land are most suitable.

Fall ploughing, disc harrowing, drag harrowing, rolling, drilling and drag harrowing are operations necessary to complete seed-bed preparation and seeding.

When the seed-bed is considered just right, give an extra stroke of the harrow. **More cultivation means bigger crops.**

What is a good seed-bed? It is suitably rich, mellow, uniformly level, fairly fine at the surface but firm below. *Example:* Well-prepared sod, hoed and cultivated land.

After ploughing, the disc harrow is the most suitable implement for preparing the seed-bed. Some types are more suitable than others. **Double disc harrows** are now being used to speed up this operation, lower the cost and ensure a thoroughly pulverized surface soil.

What is it like? This harrow consists of two disc harrows, one in front of the other, cutting, the one with an in-throw and the other with an out-throw. It requires from three to six horses to operate, depending on size of machine and horses. It saves at least one man.

You have a **roller**, employ it wisely. It is generally used to put the finishing touch to seeding operations, whereas its chief value is for firming and crumpling the soil previous to seeding.

On light soils it is essential to use the roller immediately after seeding, but it should be followed by the drag harrow to stir the smooth surface; in other words to restore the mulch, to check evaporation of moisture.

The roller should not be used on damp soil, clay especially; first allow the surface to dry, after which, rolling will have a beneficial effect by breaking the crust and making the necessary mulch. Rolling when the grain is a few inches high is sometimes advisable. It helps firm the soil and breaks the crust, as before stated.

Seed drills of modern make are worth the money. The disc drill is popular and efficient. Use as large a size as conditions warrant. A large machine lowers the cost of seeding. Most drills are abused. Oil well and protect from the weather.

HOED CROPS.

Clover sod or pastures, manured and turned under, leave the soil in excellent condition for the production of **forage crops such as roots or corn**.

For roots, fall preparation is advisable. Plough shallow in early August, roll, cultivate, and deep fall plough. Continue these operations in the spring until a deep fine mellow seed-bed is made.

Sow **mangels** as early as practicable. There are two popular methods of seeding: (a) flat or level, (b) drill. By the flat or level method rows are usually made 36 inches apart. This plan of seeding may be employed to advantage in a dry soil where it is difficult to obtain a satisfactory germination of the seed.

By the drill method, the rows are made 28 inches apart. It facilitates hoeing and cultivating, especially in the early part of the season, when these operations are most difficult to perform, but absolutely necessary.

Swedes are sown early in June in drills 28 inches apart.

The surface soil should be kept stirred and **free from weeds** from the start. The **wheel hoe** is indispensable early in the season, for the two purposes mentioned.

CORN FOR ENSILAGE.

Corn will grow on any **well drained and well manured** soil.

Good methods are essential.

Heavy, well-drained clay will give good results, fall ploughed. Spring ploughing is, for average soil conditions, advisable.

Plough rather shallow—four to five inches deep—according to soil, turning a flat score, roll and disc or drag harrow at once if possible, and continue these operations until the seed-bed is deep, level and fairly fine.

Plant early in May when the **weather** and **soil** have become **warm**.

Corn requires considerable heat for rapid germination and growth, which is essential for the success of the crop.

There are two common methods of planting: (a) hills, (b) drills.

The **hill method** is advisable for fields foul with persistent weeds, whereby the maximum amount of power cultivation can be employed to best advantage. The

hills should be not less than three feet apart each way and three vigorous plants per hill are ample.

The drill system of planting is satisfactory for ordinary conditions.

Planting the rows $3\frac{1}{2}$ feet apart, with plants seven to nine inches distant in the row, is conducive to the production of a crop satisfactory as to quality and quantity.

Maintain a mulch from planting time. Use a light drag or slant tooth harrow until the plants are about to appear above ground. Discontinue harrowing until the plants are three to four inches high, then the harrow may be used again to form a mulch, destroy weeds and weed seeds and thin the plants in the row if too thick.

MEADOWS.

New meadows especially if exposed to prolonged action of frost are usually benefited by rolling when dry enough to carry the horses. Rolling firms the roots in the soil and thus aids them in becoming strongly established.

Bare spots in otherwise good stands, should be seeded when the frost is honeycombing the surface soil. The action of the frost will provide sufficient covering for the seed.

CROP ROTATIONS.

Crop failures in 1916 were common. Many farmers had fairly good returns.

There were reasons for the success of these energetic business-like, progressive Farmers. They were fortified against adverse conditions by the employing of reliable methods during the past number of years.

Their land is underdrained, crop rotation and suitable cultural methods are employed, stock raising is a main issue, manure is conserved and applied to best advantage, and leguminous crops are grown.

Crop rotations, coupled with judicious cultural methods, are most important for a successful harvest every year.

The following features of our crop-rotation work would seem to be among the most important factors making toward profitable results:—

- (1) Rotations always comprise hoed, cereal and forage crops.
- (2) Grain fields are always seeded down with clover, even though it be used only as a fertilizer.
- (3) Grass and clover seedings are heavy. Increased crops of hay and rare failures of a catch have justified this practice.
- (4) Hoed crops form a large portion of every rotation. An attempt to farm a small area without a hoed crop was not successful. Weeds could not readily be kept in check.
- (5) No field is left in hay for more than two successive years. Our records show that the second crop almost always costs more per ton than the first, and that succeeding crops are very likely to be grown at a loss.
- (6) Barnyard manure is applied frequently in comparatively small quantities, rather than at long intervals in large quantities.

Rotations have been in operation for eighteen years on the Central Farm, Ottawa, and for a number of years on the Branch Experimental Farms and Stations of every province. Inquiries regarding rotations addressed to the Dominion Field Husbandman, Central Experimental Farm, Ottawa, will receive careful and immediate attention.



