FIELD CORN

VARIETIES AND HYBRIDS SUITABLE FOR EASTERN CANADA

Field Corn

CORN now occupies a permanent place in the crop rotation on many farms in Eastern Canada. Of the 400,000 acres grown for fodder annually more than 80 per cent is located in the province of Ontario. However, varieties are now available which can be grown to advantage throughout the greater part of Eastern Canada. An additional 180,000 acres of husking corn are grown annually. Grain corn production is at present concentrated largely in South-western Ontario, chiefly in the counties of Essex and Kent, although in Central and Eastern Ontario and in western Quebec satisfactory yields of grain corn have been secured.

Growing the Crop

Soil and Climatic Requirements.—The conditions which are most favourable to corn growing are high temperatures and long growing season. Like most other crops corn responds to favourable moisture conditions and prefers a fertile, deep loam soil. Heavy clay soils, particularly if they are low-lying, poorly drained and cold, should be avoided.

Soil preparation.—In preparation of the land fall ploughing has given best results. The surface soil should be worked in a manner that will provide a fine mellow seed-bed and effectively control weeds.

Seeding.—Seeding should be done at the earliest dates possible after the soil has become warm. Seed sown in cold soil is slow to germinate and often produces weak plants. The corn crop may be sown in rows 36 or 42 inches apart or check-rowed in hills. Row seeding does not require the use of special implements and is the most widely used method in Canada. The plants should be thinned to about one foot apart in the rows. The amount of seed required varies with the variety used since varieties differ greatly in size of kernel. Seeding rate will vary from 15 to 25 pounds per acre. However, about the same quantity of seed is required whether sown in rows with plants spaced one foot apart or in hills with three or four plants per hill.

Cultivation.—A stroke of the drag harrow, crosswise the rows after the plants are 3–5 inches high will aid in controlling weeds and assist in thinning.

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Shallow cultivation between the rows with the corn cultivator should be repeated as often as is necessary to control weeds. Deep cultivation is injurious.

Harvesting.—The corn crop should be harvested for silage when the grain is in the "hard dough" or "glazed stage." Late maturing, high yielding varieties of corn which have to be harvested at a very immature stage provide ensilage which is relatively low in feeding value. Growers are well advised to select varieties which will reach the "hard dough" stage before harvest, even although such varieties may yield slightly less than the later maturing types.

In harvesting for grain the husks should be dry and the kernels hard. The usual practice is to husk by hand, from the standing stalks, after the first autumn frosts. At that time the ears are usually dry enough to crib and they break from the stalks easily. Husked corn should be stored directly in cribs to promote drying. At husking time corn normally contains from 20 to 35 per cent moisture. Usually several months storage in the crib are required to reduce the moisture content of the grain to 12-17 per cent. At this stage of dryness the corn may be shelled and stored safely in bins.

Varieties

Our varieties of field corn are of two types, dents and flints. The dent corns as a group are later maturing than the flints, somewhat taller, heavier yielding and produce fewer tillers. The following are some of the most widely grown varieties of dent and flint corn in Eastern Canada:—

Golden Glow.—This is a 14–18 rowed yellow dent with red cobs. It was originated by the Wisconsin station by crossing Wisconsin No. 8 and North Star and was introduced into Canada in 1923. It has proved to be one of the best kinds for ensilage purposes. There are several strains of this variety differing in time of maturity. Late strains are about 10 days later in maturity than the early and are somewhat higher in yield. Early Golden Glow is favoured for ensilage by many growers in Eastern Ontario.

Silver King (Wisconsin No. 7).—This is a 12–16 rowed white dent with a white cob which was produced by H. J. Goddard of Iowa in 1862. One of the valuable characteristics of this variety is its freedom from barren stalks. It is widely grown for ensilage in Central Ontario and to some extent in Eastern Ontario, although slightly earlier maturing types usually make a better grade of silage under Eastern Ontario conditions.

Leaming.—A 16–20 rowed yellow dent which was originated by J. S. Leaming, Ohio, in 1856. It was selected for earliness, medium height and tapering ears. Some improved strains are "Improved Leaming," "Canada Leaming" (varietal hybrid) and "Burr-Leaming" (from a multiple cross).

Compton's Early.—An 8–12 rowed yellow flint which was originated at the Connecticut station in 1893 and was introduced to Canada in 1895. It belongs to the medium maturity group and has become fairly popular as an ensilage corn in Canada.

Longfellow.—An 8-rowed flint which was originated by a descendant of the poet and was first distributed by a New England seed company. It is about 10 days earlier than Silver King and makes a good ensilage variety where the growing season is too short for such varieties as Wisconsin No. 7 or Canada Golden Glow.

Salzer's North Dakota.—This is an 8–12 rowed white flint. It is one of the earliest varieties of white flint, is short-growing, tillers profusely but produces

its ears low on the stalks. It is grown as an ensilage variety in some sections of Eastern Canada where the growing season is relatively short.

Quebec No. 28.—This is a 12-rowed yellow flint. It is a selection made at Macdonald College, Quebec, from a local strain which had been grown in Quebec for many years. It matures in about 110 days at Ottawa and is a good yielder. It is probably the most widely grown grain corn in Eastern Ontario and Western Quebec.

Twitchell's Pride.—An 8-rowed yellow flint which was originally obtained from Dr. G. N. Twitchell, Maine. It has been grown for many years at the Dominion Experimental Station, Fredericton, N.B., and ripens regularly there. It belongs to the same maturity group as Quebec No. 28, but is a slightly lower yielder.

Algonquin.—This is a varietal hybrid from a cross between Silver King (Wisconsin No. 7) and Quebec No. 28. It was produced and distributed by Macdonald College. It is almost as early as Quebec No. 28, and yields well. It has become popular as an ensilage corn in some areas in Quebec and the Maritime Provinces.

Maturity grouping of varieties.—The adaptation of corn varieties to the various parts of Eastern Canada is indicated to some extent by the following grouping on the basis of maturity:—

Early	*Midearly*	*Late*
Group 1	Group 2	Group 3
Quebec No. 28	Algonquin	Leaming
Twitchell's Pride	Longfellow	Late Golden Glow
	Compton's Early	Silver King (Wisconsin No. 7)
	Salzer's White Flint	
	Early Golden Glow	

Group 1 contains the varieties that can be grown for grain in Eastern Ontario, Quebec and the Maritimes. Group 2 contains the varieties suitable for ensilage in Quebec and the Maritimes. Group 3 contains the varieties that can be grown for ensilage in Ontario or for grain in Western Ontario.

Hybrid Corn

The term "hybrid corn" is relatively new to Canadian growers, although corn hybrids are rapidly gaining favour in Canada, particularly in Southwestern Ontario, where considerable quantities of corn for husking are grown annually. The value of "hybrid corn" can better be judged from its extensive use in the United States, where more than 15,000,000 acres of it are planted annually. Its use in the United States results in an estimated increased yield of over 100,000,000 bushels as compared with the same acreage sown to ordinary corn varieties.

Good progress has been made by the Dominion Experimental Farms in Eastern Canada in the breeding of hybrids suitable for production under our conditions and in addition numerous hybrids from the United States have been tested to determine their suitability under Canadian conditions. Arrangements have been made for the production of seed of selected United States hybrids in Canada to meet Canadian demands until seed of suitable Canadian produced hybrids can be made available in quantity.

The successful use of hybrid corn is based upon the fact that certain characters can be fixed in a corn plant by inbreeding and that the crossing of these inbreds in a certain way can always be depended upon to produce similar results. Not only are the resulting hybrids usually more uniform,

vigorous and higher yielding than the varieties from which the parent inbred lines were secured, but in addition many of them show stronger root development and stronger stalks which result in less lodging. Also these strong hybrids suffer less damage from the corn borer and have other advantages.

The grower is reminded that all hybrids are not superior. Just as the grower must choose varieties with care, so must he exercise caution in choosing a hybrid suitable for his conditions. Hybrids which do well in some districts may be quite unsuitable in other areas. For this reason, Canadian growers are advised to purchase seed only of those hybrids which have been tested in Canada and which are recommended by Agricultural Experimental Stations as being suitable for certain areas.

Regulations governing the importation and sale of hybrid seed corn of field varieties as quoted from the Seeds Act, 1939, are as follows:—

"Hybrid strains of field corn shall be designated with a name or number. The use of the term 'hybrid' shall be restricted to first generation stock of a cross the parentage of which involves two or more inbred lines or their combinations. Such hybrids shall not be eligible for importation or sale in Canada under the provisions of this act until certified by an accredited certifying agency. Further, the official certification tag must indicate the hybrid designation and its approximate maturity in the state or country where developed." Sources of accredited hybrid corn seed may be obtained from the Plant Products Division, Production Services, Dominion Department of Agriculture, Ottawa.

For information relating to suitable hybrids for production in Canada, growers are advised to get in touch with their nearest Agricultural Experimental Station.

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