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1	2
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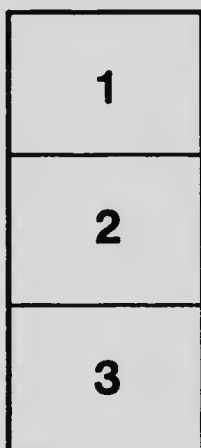
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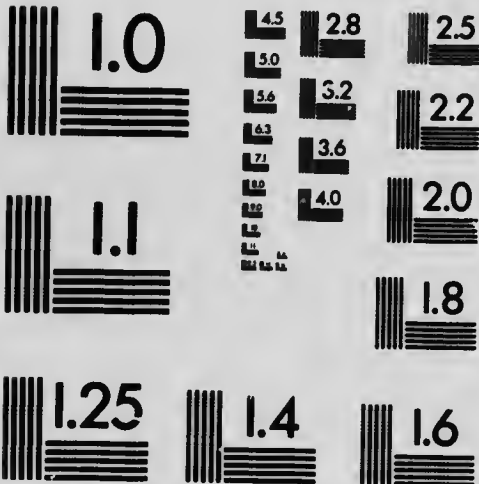
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Department of Agriculture of the Province of Quebec  
Greater Production Service

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CIRCULAR No 34

TIMELY HINTS

**Weeding and Cultivation**

— BY —

A. T. CHARRON, M. A., D. Sc.

Though the immense benefits to be derived from the removal of weeds and clean cultivation are generally known to the farmer one cannot fail to note how often these two important agricultural operations are neglected. The farmer knows but he forgets. Hence the necessity of reminding him when the time to act has arrived.

*Weeding* is generally understood to mean the removal of weeds from the cultivated fields by means of the hoe or the horse cultivator. In actual practice, however, it implies something

more. Any plant foreign to the particular variety grown, however valuable otherwise, must be considered a weed for it lives and grows at the expense and to the detriment of the cultivated plant and hence is damageable. Its removal is imperative.

*Cultivation* implies the loosening, by means of convenient tools, of a thin layer of the surface soil to produce an earth mulch with the object of checking the capillary action which tends to bring the soil moisture to the surface where it is dissipated through the action of the wind and the solar rays.

### **Reasons for weeding.**

All plants, whatever class they may belong, whether useful as wheat, barley or corn or harmful like the eye daisy, quack grass or mustard, feed on the same nutritive elements which they obtain from the soil. Some of these elements of fertility are present in the soil, in

available from, only in very limited amounts. Indeed in some cultivated soils the quantity is scarcely sufficient to satisfy the needs of the particular crop cultivated. Needless to say, therefore, that the amount of plant food abstracted from the soil by undesirable plants may be responsible for a considerable decrease in the crop.

### **Weed Early.**

Growth is produced at the expense of plant food. The tiny little plant, in the course of its development, stores up in its tissues the soil's fertility. The more it is allowed to grow the greater the quantity of food absorbed and the greater the damage. Early weeding is, therefore, an imperative necessity. One might be inclined to think that not much harm results from delay, so long as the cut weeds are left on the field to decay. True enough the plant food is not removed from the field, but it has undergone a transformation which renders it unavailable for the growing plants. Locked up in the mutilated



plants left to decay it is useless for a considerable time. Hence the necessity of cutting the weeds before they have accomplished considerable growth, if we do not wish the cultivated plants to be deprived of a considerable quantity of the food to which they are entitled.

A delay in weeding is a serious mistake which may be responsible for a marked decrease in the crop not only because plant food is diverted from its object, but also because weeds, like all plants, consume enormous amounts of water to develop normally. A failure in crop is oftener attributable to lack of water than to lack of food.

This is an aspect of the question which is seldom considered and little appreciated by the farmer.

Carefully conducted experiments have demonstrated that the following ordinary field crops extract from each acre of the soil on which they grow the following quantities of water.

Corn.....	357,000	gallons
Peas .....	381,600	"
Barley.....	468,600	"
Potatoes .....	539,000	"
Cats.....	895,000	"

Weeds allowed to grow on the field absorb equally enormous quantities of water. Hence their presence may reduce so much the store of soil water that the yield of the desirable crop may be considerably endangered. Weeding, therefore, is a duty which no intelligent farmer can shirk.

### **Reasons for Clean Cultivation.**

To protect the crops against the invasion of weeds and undesirable plants is highly commendable, but this operation is not sufficient to insure good returns. The figures given above indicate the enormous quantities of water required by plants for normal development. This water must be obtained from the soil and means to conserve therein an abundant supply must be resorted to. Clean cultivation is one of the most efficient means devised by farmers for this purpose. Soil

water has a tendency to rise, through capillary action, to the surface of the soil where it is carried away by the winds or vaporised by the solar rays. Large quantities are thus dissipated and lost for the growing crops. A careful working of the surface soil by means of a good cultivator produces a dry earth mulch which acts as a blanket and prevents the soil water from reaching the surface. Carefully conducted experiments have proven that clear cultivation will, on an average, conserve in one acre of soil, about 20,000 gallons of water which otherwise would have been lost. The dissipation of such a quantity of water, if care is not taken to prevent it, may be responsible for a total crop failure.

Another important advantage accruing from the practice of cultivation must not be overlooked. The cultivator opens up the soil and allows air to penetrate it freely. This aeration accelerates nitrification of the nitrogenous compounds and vegetation is thus given an impetus attended with the best results in the yield.

## **When to Cultivate.**

Cultivation should be practiced whenever the soil becomes packed. After a heavy rain the soil packs down firmly and upon drying a crust forms. This crust must be pulverized and this is done with the cultivator. Cultivate to mellow the soil, cultivate to destroy the weeds and the crop yields will be satisfactory.

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