

—the storage and conservation of soil moisture. The cost of the added cultivation is, of course, an extra charge against the fallow. In soils where the moisture supply limits the yield of crops it has yet to be demonstrated that early fallowing, even at a greater cost, does not pay."

GENERAL CONCLUSIONS.

In conclusion, then, the dry lands of earlier days are producing crops because men have found out how to get moisture into the land and keep it there. They "store" it by letting the soil lie idle one year in two or three or four or five, as necessary, and by putting it, early in the rainy season, in such a condition that it will absorb the rains that fall and not let them "run off" the surface. They do this by plowing deep, early in June. They "conserve" it after it has been "stored" by controlling "evaporation" and weed growth, the two things which dissipate moisture from our soils. They control "evaporation" by tilling the land in such a way as to form a "mulch"—a loose shallow layer of dry soil—on the surface of the field. And they control weed growth also by timely and suitable tillage with harrows, discs and cultivators.

To be most effective a fallow should be surface cultivated the fall before, plowed early in June, not 3 or 4 inches deep, but 6 or 7 inches or more, particularly on old land; should be harrowed immediately after plowing, surface cultivated as necessary to maintain an efficient mulch, to control weed growth and to have the soil firm to within about three inches of the surface. In regions where the rainfall is greater and where fall frosts are likely to do damage, such extreme dry farm practices as result in later maturity of crops should be modified in order to meet the more humid and colder conditions found.

The frequency of the fallow may be lessened by the use of inter-tilled crops, the practice of suitable rotations, the maintenance of the humus content of soils and by a more intensive agriculture; but these will not replace it or a modification of it in the drier parts of this province as long as grain growing is our principal occupation.

At present the fallow is absolutely essential in the southwest; it is less essential but advisable in southeastern and in central Saskatchewan; it is to be desired occasionally in the northwest; but it need be less frequent in the east and northeast than in the other parts. Indeed, on some of the richer soils in the northeast it may under good management be practically dispensed with. But northeastern Saskatchewan is not the "great American desert" of earlier days.

The fact that the fallow dissipates the two most valuable constituents of fertile soil, viz., organic matter and nitrogen, is a matter of national concern. If it is a fact that the fallow dissipates 100 lbs. of nitrogen per acre per year and that the nitrogen is lost for purposes of crop production, it is also a fact that the loss of potential wealth to the state from every acre of summerfallow every year is about equal to the present price of the land. The present generation of land owners will not feel the loss of this source of wealth but later generations must. Yet even if this teaching were accepted and