

allowing better drainage, preventing both puddling and baking; second, it will act somewhat like a mulch, preventing surface evaporation and gathering of the salts at the surface; third, it will supply the young plant with available plant food in the spring, when the alkali soil, which is inclined to be cold and dead, will not. Plow the land in the summer as deep as the subsoil will permit. This will leave the soil open and exposed to the snow and frost during the winter, which will tend to sweeten it for the following year, as fall plowing always tends to do. In the spring, as soon as the land is dry enough to permit, surface cultivation either with the cultivator, disc or spike tooth harrow should be followed. This will prevent surface evaporation and form the best possible seed bed for the crop. Thorough cultivation must always be maintained upon alkali soil in the spring before the crop is seeded.

### *Crops.*

Next comes the question, What crop is to be tried upon such soil? Experiments have proven conclusively that plants differ widely in their ability to withstand alkali. What we want is a crop that will aid in removing the salts and at the same time give a profitable return. Of the cultivated crops, sugar beets will stand the most alkali and give good returns.

They are an inter-tillage crop, being cultivated between the rows like corn, thus keeping a surface mulch on the ground. They also absorb large amounts of soluble salts, and remove the salts in this way. Sometimes the first crop on such soil will absorb such a large amount of salt that cattle will refuse to eat them, and if starved until they do eat the beets the effect is the same as a physic. In Manitoba sugar beets are planted from March to June 1st at the rate of four pounds of seed per acre, in rows of an inch and a half, in rows thirty to thirty-six inches apart and in rows to nine inches apart in the rows. The Danish sugar beet is a good variety, and will yield from 400 to 500 bushels per acre. The roots should be pulled in the fall before the frost and the tops cut off not too short. They make an excellent succulent winter feed for all classes of live stock and especially for dairy cattle.

The seeding can be done by using the common grain drill, mixing one-third seed with two-thirds barley chop, stopping up the tubes in the drill to make the rows the required distance apart and regulating the drill to plant the seeds at the required rate in the rows. The crop should receive three or four surface cultivations during the summer to keep down the weeds and prevent evaporation. It is sometimes necessary to raise a beet crop the second year on bad spots, but usually it is well to plow in the fall just after harvesting the crop of beets and try a grain crop the following year. Of the grain crops raised in Manitoba, oats have proved more resistant than barley or rye, but under certain conditions barley has given more profitable results. This may be due