

done. In 1913 the increase from the same practice was 3 bushels and 36 pounds, and in 1914, 1 bushel and 21 pounds per acre.

Summarising twenty-eight tests during three years the increase from one operation of the heavy harrows or two of the light lever harrows the same day the ploughing was done was 1 bushel and 57 pounds of wheat per acre. We are firmly convinced that harrowing ploughed land as soon as possible after the operation is performed is a very important and necessary operation on all Saskatchewan soils, except only a few tight clay types that may run together and bake if more than normal precipitation occurs.

(5) The furrow slice should be flat and firm against the furrow bottom.

In humid climates the practice of turning the furrow over flat is not considered advisable, but in semi-arid regions it is. In addition to ploughing in this way it is important that the furrow slice be placed firmly in contact with the subsurface soil. This can be done by using a land packer, or by thorough surface cultivation, or, if the work is done early enough, the rains accomplish the same end, and at no cost.

A summary of all our work with the "surface" land packer shows that packing deep ploughing increased the yield of wheat 2 bushels and 6 pounds per acre, and packing shallow ploughing 40 pounds per acre; while packing unploughed stubble land decreased the yield three years out of four.

It was observed that where packing was done the crop invariably was more uniform and earlier. The practice of firming fall and spring ploughed land in dry regions seems desirable, although the best time for doing it is not apparent. The surface packer should generally be followed by the harrow, particularly if the packing is done after seeding.

(6) Burning stubble is permanently wasteful, but immediately profitable.

The average yield during three years for all stubble land that was surface cultivated in any way was 15 bushels and 56 pounds of wheat, while the average for the same length of time for land that was burned and then surface cultivated was 16 bushels and 33 pounds per acre.

A very much greater increase from burning has been reported from the Qu'Appelle Valley and Regina Plains, where the soil is heavier and where the stubble grows longer and holds more snow. It would seem that on heavy rich soils, where the straw grows tall, burning in the spring after the long stubble has been left to gather snow, is a practice that, for immediate profits, is conducive to large net returns.

On the other hand, this method does not give opportunity for controlling the spread of annual and biennial weeds. In regions where spring burning has been followed for any length of time these are very abundant. In some older districts where weeds are abundant, and where the fallow blows so badly that the drifting soil covers stubble fields and renders spring burning impracticable, fall burning and surface cultivation is sometimes practiced. A good burn cannot always be obtained in the fall, and this practice is generally more dangerous to property. It offers better opportunity to "conserve" moisture and kill weeds, but less to hold snow. The chief faults of stubble burning are the great