

Curbing the wind

The twenty-ninth biennial report of the Kansas State Board of Agriculture includes this short article by L. C. Aicher, superintendent of the Fort Hays Experiment Station in Hays, Kansas. In the article ("Curbing the Wind" in Twenty-Ninth Biennial Report of the Kansas State Board of Agriculture for the Years 1933 to 1934"), Aicher describes the most effective techniques for preventing wind erosion, stating that "the secret in preventing soil from blowing is to keep the surface in a roughened condition." He also gives directions about the best methods for listing land and caring for fallow fields.

Creator: Aicher, L. C.

Date: 1935

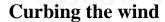
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poses if the needed information is secured and then a constructive program is based on such information.

Kansas has scarcely begun to secure the information needed to solve this problem. The more quickly the needed information is secured the sooner will the present processes of perpetuating misery and privation on submarginal lands be stopped. Also, this will stop losses to the state and nation which are incurred whenever relief must be extended to those who make the mistake of attempting to farm marginal and submarginal land.

This discussion has dealt with the problem of the land which is marginal or submarginal. Little has been said of the efficient use of the supermarginal lands. More efficient use of these better lands would naturally result from more definite information concerning them. This is one of the greatest values of a program such as has been outlined. It is one of the most certain ways of increasing the prosperity and the happiness of the people of Kansas. Delay in starting such a program will result in losses to the people of the state that will be far greater than the cost of securing the needed information and putting into operation a program for the efficient use of Kansas land. When this is done Kansas can have a satisfactory land utilization program and it will be possible to answer the question of whether there are any considerable areas of marginal and submarginal land in Kansas. Until this is done the state and the citizens of the state must continue to guess concerning these vital matters with all of the individual and social losses that go with such guessing.

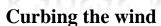
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L. C. AICHER, Superintendent, Fort Hays Experiment Station, Hays, Kan.

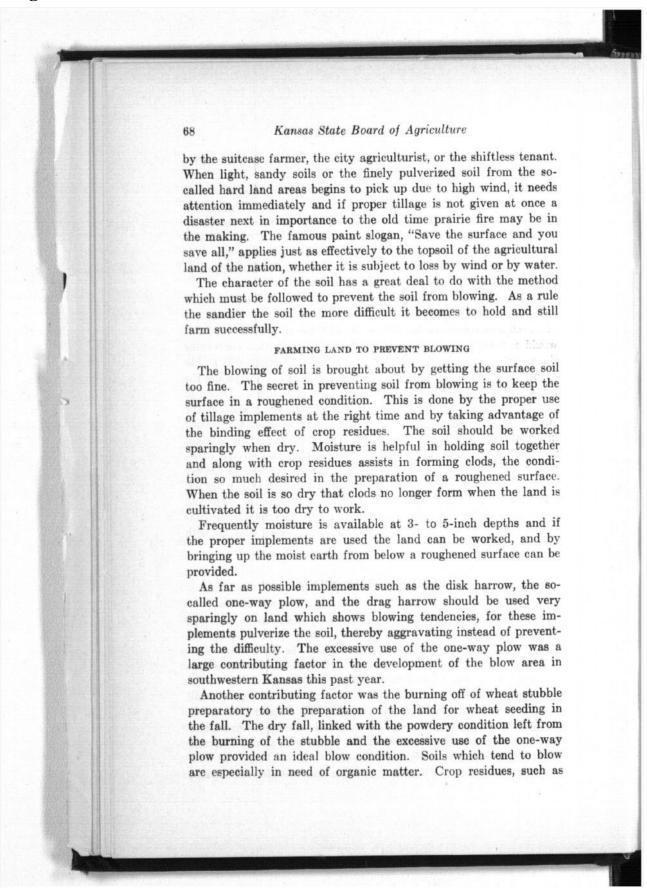
THE blowing of soil, excepting in the very sandy areas, is a sign of carelessness. Most soil blowing can be prevented by the proper use of the right kind of implements at the right time.

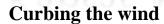
Heavy winds this past year and a half removed the top soil as far down as it was plowed from a large number of farms in the great plains area. Other farms were heavy losers of top soil, soil which was thousands of years in forming, and it cannot be gotten back nor can topsoil on the areas thus denuded be rebuilt in a single lifetime. The topsoil over most of the plains area is not deep and every effort should be made to preserve it.

Land which shows a tendency to blow cannot safely be farmed











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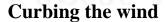
straw, aid very materially in holding the soil and preventing it from blowing. The lister is especially valuable as a tillage implement in the lighter soils because it does not cover up all the straw as does the plow. In leveling the listed land with the ridgebuster much of the straw is still left mixed up with the top soil where it is of much value in holding the soil.

Other implements which are especially valuable in the handling of soil having tendency to blow are the duckfoot weeder, sometimes called the field cultivator; spring tooth weeder; a spring tooth carrying a duckfoot blade; the revolving rod weeder; and the spring tooth harrow.

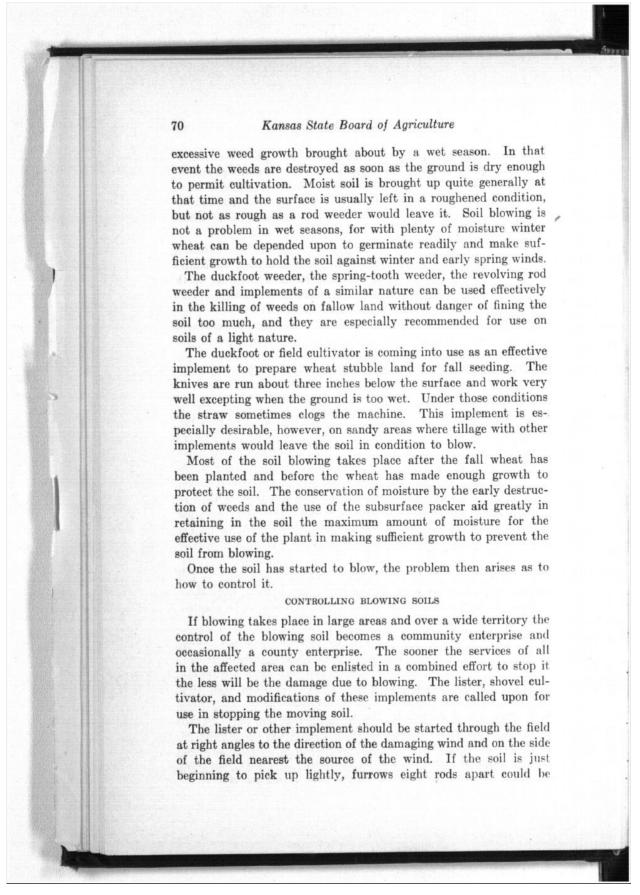
The Fort Hays Experiment Station has successfully prevented light soil from blowing. The methods used on annually cropped land and on fallow are presented to indicate best methods for central western Kansas. Modifications may be required in other sections, depending upon conditions.

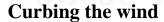
Method used on annually cropped land. The stubble land is blank listed behind the combine or as soon thereafter as possible. When the first weeds and volunteer wheat appear the listed ridges are leveled off with the ridge buster. The operations leave much straw at or near the surface. If rains come to start more weeds and volunteer wheat, the one-way plow with a subsurface packer (not a cultipacker or roller) tied behind and weighted, is used to destroy the weeds and firm the soil. With this last operation much of the straw is still left in the surface soil, and the packer has left the surface in a roughened condition. The land is usually ready for planting after this last operation. Sometimes, however, wet seasons cause more weeds to grow, making it necessary to kill another crop, in which case the one-way plow is used, since there is plenty of moisture to bring up the wheat crop soon to be planted, hence a blow condition need not be anticipated.

Method used on fallow land. The first operation is that of blank listing. If it is felt that the land will hold over winter without blowing the land to be fallowed is not listed until about the middle of May; otherwise it is fall listed. When the first weed crop appears the listed land is leveled off with a ridge buster. Successive weed crops are destroyed by the use of one or the other of the following implements: duckfoot weeder, revolving rod weeder, or the spring-tooth harrow. Care is always taken to cultivate at times when a roughened surface can be obtained. The only time that the one-way plow is used on fallow land is during seasons of











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tried to determine their effectiveness. If the blowing is not stopped with furrows at these intervals then a furrow should be run between the furrows previously made. The furrows then become four rods apart and should be just twice as effective as the first set was. If these do not control the blowing the dividing of the intervals is called for again and if necessary another dividing should be given. To save loss in the wheat crop due to destruction from furrow making, the least number of furrows necessary to hold the soil should be used. Loss in yield from fields having furrows run at four rod intervals is very small, for the nearby wheat plants utilize all the available moisture and produce heavier. The furrows in the wheat fields should be closed up as soon as the wheat is high enough to protect the soil.

It is a much more difficult task to stop soil from blowing after the entire field has had an opportunity to blow. If fields all around a farm are blowing or if the roadways are moving it is difficult to control blowing on land thus surrounded. Intelligent community action is essential in the prevention of soil blowing. Unless all the land in the affected area receives protective attention just as soon as the soil begins to move tremendous effort at a later date may prove fruitless.

MANURES, LEGUMES AND COMMERCIAL FERTILIZERS

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IN GENERAL, when virgin land is broken the farmer deals with a soil of relatively high-producing capacity. Under such conditions he is not at once interested in methods of soil building or improvement. The soil under cultivation rapidly loses this virgin fertility and finally reaches a point where the level of fertility becomes so low that it is difficult to produce profitable crops. It is then necessary to attempt to build up its fertility. There are several methods of soil maintenance and soil improvement that may be practiced. These include the use of barnyard manure and crop residues, the application of commercial fertilizers, and the growth of leguminous crops. The problem then is to know which method or methods should be used in attempting to maintain or build up the fertility of Kansas soils.

In the first place it should be made clear just what each contributes to the soil. Manure, which constitutes the residue of the