

with good results, but are not grown nearly as much as the benefits derived from them would warrant.

#### KIND OF COVER CROPS TO GROW.

Almost any crop that will make a good growth in the fall of the year and form a cover over the ground in the winter, provided the seed is not too expensive, is a good crop to grow. There are a great number of crops that can be grown, but we can divide these into two main divisions—the legumes and the non-legumes. The legumes are the plants which belong to the clover family, such as peas, beans, vetches, etc., and the non-legumes are all of those not included in this family of plants. The advantage of a legume over a non-legume is that the legume is capable of gathering nitrogen from the air and storing it in its roots. They increase the nitrogen-content of the soil, as well as furnish humus. Where the soil is lacking in nitrogen, which can be recognized, provided the soil is well drained and has good treatment, by a poor, stunted growth and pale-green leaves, a leguminous crop is the one to grow, for this is the cheapest and best means of supplying nitrogen to the soil. Another factor to consider in choosing the crop to grow is whether or not the crop will stand the hard frosts of the winter. If it is desired to protect the roots of the tree, a hardy crop should be chosen. Rye is one of the best crops we have in this respect. It grows readily on most all soils, is hardy, and when sown at the rate of about 90 lb. to the acre, furnishes an excellent mat over the ground during the winter, which will catch and hold snow and prevent a great deal of washing on hillsides in the spring. Where orchards are planted on hillsides, a crop that does not kill by frost should be used, for it prevents the washing-away of a great deal of valuable soil. Winter wheat has given good results, and can often be secured easier than some of the other crops. Sow 90 lb. to the acre.

Buckwheat is a good crop to grow on heavy clay land. It germinates readily, and is valuable in putting land in good tilth. It does not afford much winter protection, and is not to be recommended for that purpose. Sow 60 lb. to the acre.

Turnips have been used to some extent, but the results obtained from their use have not been very satisfactory. Sow 1 lb. to the acre.

Rape is often used as a cover crop, sown at the rate of about 6 lb. per acre, but is not of much value as a winter protection.

Of the leguminous crops, we have the clovers, vetches, and peas. Hairy or winter vetch has been grown with very good results, but the price of seed is so high it can only be recommended where the soil is lacking in nitrogen. It is the best of the leguminous cover crops, as it forms a close, heavy mat on the soil during the winter months and does not kill out easily. Sow about 50 lb. to the acre.

Crimson clover in districts where it grows well makes an excellent cover crop if sown from 12 to 15 lb. of seed to the acre.

In the above notes only those crops that have been tried out have been discussed, and of all the crops mentioned, rye is, for all ordinary purposes, giving the best results. A mixture of rye and hairy vetch makes an excellent crop. It is also a good plan to mix in some turnip or rape seed when using crimson clover.

#### TIME TO SOW THE COVER CROP.

The time at which to sow the cover crop will vary with conditions, and it is impossible to lay down any hard-and-fast rules governing the time to