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THE SEEDING OF CLOVERS AND GRASSES.

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The Agricultural Experiment Station receives a large number of inquiries each year regarding the methods of seeding clovers and grasses, and to supply this information this circular has been issued.

There is probably no practice connected with agriculture regarding which there is greater difference of opinion among farmers than that of the methods of seeding grasses and clovers. This is largely due to the fact that a stand of either clover or grass is dependent upon so many factors, such as weather conditions, soil and quality of seed.

Clover and Timothy. The most common meadow mixture in Missouri is that of red clover and timothy. Where these are sown together with a nurse crop of small grain, the first crop of hay is usually secured the year following the harvesting of the nurse crop, although on the best lands a fair crop of clover may sometimes be secured the same year they are seeded. The first year's crop is usually almost pure clover and the second about an equal mixture of clover and timothy, and if left a third year will be almost pure timothy. The most common method of seeding this mixture is with wheat or oats as the nurse crop. Where wheat is used, the timothy may be sown in the fall with the wheat, using the grass seeder on the drill and allowing the drill to cover it, sowing the clover in the spring. The rates of seeding should be from eight to ten pounds of timothy and six to eight pounds of clover. In this case, the clover is usually sown in late February or early March broadcast, sowing this some morning when the ground is

“honey-combed” with frost and before it thaws. Other methods are used by many farmers but this seems to be the most generally successful.

Where timothy is not fall sown a better practice but one which requires more labor and greater judgment, is to wait until the ground is dry enough to harrow, usually in March or early April, broadcast both clover and timothy and harrow in. This method is surer than any other if the ground dries sufficiently early to crumble well under the harrow and the harrowing will also be of benefit to the wheat. The difficulty comes in catching the ground in the proper condition for harrowing but the practice is to be recommended where the soil dries sufficiently early to allow of it. Where timothy has been fall sown, however, it is not wise to harrow in the clover in the spring on account of injury to the young timothy plants.

Where timothy and clover are put in with oats broadcasted, they may be sown at the same rates recommended above and all harrowed in together. This practice is not entirely satisfactory, however, either for the oats or for the clover and timothy. A much better plan is to drill the oats, sowing the timothy and clover from the grass seeder on the drill or broadcasting them ahead of the drill. Where oats are broadcasted the best plan is to harrow in the oats either with a disk or drag harrow then broadcast the clover and timothy and harrow again lightly, covering the seed from a quarter to a half inch deep.

Clover and timothy may both be sown in the fall but clover is quite uncertain when put in at the same time as the wheat. It is best sown earlier, either in the corn in late summer or on a specially prepared seed bed. When sown in the corn it should be worked in with a small harrow or drag. It is rarely possible to get an even stand when sown in the corn, and the land is usually left rough for the clover meadow the next year. Where a special seedbed has been prepared, clover and timothy may be seeded together in late summer or early fall without a nurse crop. This will give a good yield of mixed hay the next year providing the season is favorable for them to come through the winter. Clover is much more apt to freeze out, however, when it is fall sown. It is a very good practice where timothy alone is desired to seed in the fall on a specially prepared seedbed. This will give a good crop of timothy the next season if conditions are reasonably favorable.

On lands that are wet and where red clover is uncertain, the use of alsike clover is to be recommended sown at half the rate of the red. It is a short perennial clover which will last three to five years although it is only about half as large as the red. It makes a fine quality of hay but not a very heavy yield. It should be mixed with timothy where it is to be used for hay.

Mixtures for Pastures. Where pasture is desired a mixture of timothy, red clover, alsike clover, white clover and bluegrass may be seeded, although on lands well adapted to bluegrass it is a more common practice to omit this and let it gradually come in as the land is pastured. The same can be said of white clover, although it is somewhat better practice to add both of these. In buying bluegrass seed, special attention should be given to getting seed that is as free of chaff as possible and that germinates well. The seed should weigh at least twenty-four pounds per bushel and it should germinate at least sixty percent. Most of the difficulty that has been encountered in seeding bluegrass has been due to the fact that the greater part of the bluegrass seed on the market is of low vitality.

Where bluegrass is used a seeding of six pounds of timothy, four pounds of red clover, two pounds of alsike clover and six to ten pounds of good bluegrass seed should be sown. The grasses can be sown in the fall with wheat and the clovers in the spring or all may be sown in the spring with oats or spring barley. If white clover is desired quickly, two pounds of this should be added to the mixture. The cost of this grass and clover seed will be around \$3.00 per acre if the maximum quantity of bluegrass is used, and if the seeds are of good quality.

Orchard Grass. In seeding down dry rocky lands, especially in South Missouri, orchard grass is one of the hardiest grasses to use. A mixture of six to eight pounds timothy, four pounds red or mammoth clover, one pound alsike clover, one pound white clover and eight to ten pounds of orchard grass will give a good pasture. The clover and timothy will give pasturage the first two or three years until the orchard grass gets started. These should be harrowed in early in the spring with a small heavy harrow, without attempting to plow the land. A bushel of oats per acre harrowed in at the same time will give some pasture the first spring. On the better places of this dry, rocky land some bluegrass seed may be added, the Canadian being more hardy than the Kentucky bluegrass.

Fertilizers. The use of phosphates such as finely ground beef bone meal applied with the nurse crop on all lands that are rather low in fertility, and especially where clover has begun to fail, will help materially in securing a stand of both clover and grass. The use of top-dressings of manure on the thinner spots in pastures and meadows is also to be recommended, using a manure spreader and applying the manure lightly.

Improving Old Pastures. Where a pasture has begun to fail it can be made much more productive by drilling in with a disk drill, in early spring, a mixture of two pounds red, two pounds mammoth and

one pound alsike clover, running the seed into the gashes made by the disks. If a disk drill is not available, the land may be disked, the seed broadcasted, and then harrowed. This seeding of clover greatly increases the pasturage for the two or three years following and stimulates the bluegrass through the nitrogen added to the soil by the clovers.

A word should be said as to the importance of using grass and clover seeds of good quality. The best grades of all seeds are always cheapest in the end. The weed seeds so commonly present in the cheaper grades of seeds, together with the low vitality of these cheaper grades, especially among the grass seeds, are responsible for a large percent of the pasture and meadow troubles.

Seeds Tested Free. The Experiment Station maintains a seed laboratory at Columbia in co-operation with the United States Department of Agriculture in which seeds are tested free for all Missouri farmers and seedsmen. Farmers are thus able to have samples of seeds tested before buying to be sure that they are of the right quality.