White clover makes the pastures on pumice land—without white clover grasses will not thrive. Pumice land is easy to bring in because it will grow good white clover quickly, provided the seed is sown on a well consolidated seed-bed and manured with superphosphate. Frequent Cambridge rolling is required to get the seed-bed sufficiently consolidated for rapid white clover establishment. White clover and superphosphate are essential for the development of the ideal grass and clover perennial sward on pumice land. White clover is a highly palatable species of long seasonal growth, and is capable under manuring of spreading to form a complete surface cover, an important feature in grassing pumice land. It blends in well with the grasses of the sward, and the association with them helps nitrification in the soil, without which healthy grass growth is impossible. White clover is slow to establish on steep hillsides when the Cambridge roller cannot be used. For hillside sowings Lotus major should be included in the mixture as a pioneer clover plant, until the stock have firmed the land sufficiently for white clover to do well.

Alsike clover grows quite as well as red clover, but its use is not recommended for grazing purposes, as its summer growth on pumice land is unpalatable. Milking cows definitely refuse to eat alsike in the late spring and summer unless it is mown and wilted.

Grass Mixtures.

The basis of a permanent pasture mixture for easily ploughable pumice land should consist of certified perennial rye-grass 25 lb., cocksfoot 10 lb., and white clover 2 lb., per acre. For autumn sowings 5 lb. of Italian rye-grass may be added, and where red clover is desired in permanent sowings 2 lb. of it should be included; on undulating country with steep gullies 3 lb. of crested dogstail could be added to assist with the grassing of steep faces. For general conditions a useful permanent pasture mixture will consist of certified perennial rye-grass 25 lb., cocksfoot 10 lb., crested dogstail 3 lb., red clover 2 lb., and white clover 2 lb.—total 42 lb. per acre.

For steep hillsides which can only be ploughed with difficulty and on which the Cambridge roller cannot be used for consolidation, the grass mixture requires the addition of grasses that do not demand high-fertility conditions. Yorkshire fog and brown-top are quite good, and a useful mixture for hillside sowings consists of certified perennial rye-grass 12 lb., crested dogstail 3 lb., cocksfoot 6 lb., brown-top 2 lb., Yorkshire fog 2 lb., red clover 1 lb., white clover 2 lb., and Lotus major 1 lb. The greatest difficulty in establishing pastures on steep hillsides is to get a satisfactory strike of white clover on land that is not well consolidated; Lotus major has proved a good pioneer plant on loose hillside soils.

Time of Sowing.

Permanent pastures on pumice land can be sown in the autumn or the spring. At low elevations where the climate is mild, early autumn sowings are generally the best, but at high elevations—1,000 ft. and over—where early autumn frosts are common, spring sowings are generally the most successful. At the Ngakuru blocks (1,200 ft.) October proved the best month for spring sowing and February for autumn sowings; pastures sown after the first week in March generally suffered badly through frost killing the germinating clovers.