

## COMPLEMENTARY PASTURES FOR RANGE IMPROVEMENT

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Complementary pastures can and should be used in harmony with native range to improve range condition and to eventually increase the total carrying capacity of a ranch.

Establishment of complementary pastures which reach high production during early spring should be the first consideration. As stated previously, the early growth of perennial native species draws on root carbohydrate reserves until enough leaf area has developed to synthesize more carbohydrates than needed for topgrowth of the plants. Allowing uninterrupted early spring growth of the warm season native range species will usually result in total forage production.

Complementary pastures will usually be introduced species capable of high production within the limits of rainfall and available nutrients. High production requires a higher annual per acre investment in seed, fertilizer and fences. Because of the higher cost, the most productive soils on the ranch should be selected for the complementary pasture. Unfortunately these are also the sites most productive for native forages.

Examples of the forage species adapted to Central Oklahoma and their periods of use are given in Table 1. Other areas will need to adjust species and grazing dates according to adaptability and climatic conditions. Tall fescue or smooth brome grass will provide cool season grazing in areas of higher rainfall.

Table 1. Potential Complementary Pastures

Species	Season of Use (Central OK)
Small grain	March to Early May Dec. - Feb. (source of protein)
Weeping Lovegrass	April 15 - Sept. 15
Bermudagrass	May 15 - October
Sod Seeded sm. gr.	Mar. - October
Plains or Caucasian bermuda	May - October
Sudangrass	June - October
Sugar Drip Sorghum	December - March

For most of the introduced, warm season, perennial forages, it takes approximately 50 lbs. of actual nitrogen to produce an additional ton of dry matter. The land area available, forage needed, and expected rainfall can be used to calculate the amount of nitrogen to be applied. Other nutrient deficiencies, as determined by a soil test, must not be ignored.

Annual forages will generally produce more dry matter per unit of applied fertilizer nitrogen when compared with perennial forages. Working the soil during seedbed preparation speeds up the mineralization of nitrogen from the soil organic matter. More detailed information about specific forages can be found in other publications.

Excess forage produced in a complementary pasture should be harvested as high quality hay. The nitrogen applied can be recovered in the form of protein and used to reduce the purchased protein supplements during the winter months.

If the forage produced in a complementary pasture is not needed to reduce the grazing pressure on the range, this forage should still be accessible to the calves. Installation of creep gates to exclude the adult animals plus an effort to keep the forage in an active stage of growth could put extra gain on the calves. This could be especially beneficial mid to late summer when the native forages are maturing and the quality is lower.

Research at the Southern Great Plains Field Station at Woodward has shown that 15% of a ranch established to weeping lovegrass (and properly managed) can double the carrying capacity of the ranch without being detrimental to range condition.

Plants and animals are very similar. Each has a specific set of nutritional requirements for optimum growth. A nutritional deficiency is often recognized earlier in an animal than in a plant. A sick or dying cow usually gets quick attention because it is a large investment and hopefully a major source of income.

"Large investment" and "source of income". These terms can also be used to describe a range or pasture. A sick grassland needs diagnosis of the problem and prescribed treatment for recovery.