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### G89-933 Supplemental Pastures for Sheep

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## Supplemental Pastures for Sheep

Efficient and effective ways to pasture sheep are covered here.

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Feed costs account for approximately 80 percent of all costs in many dry lot feeding programs for sheep. These costs can be reduced to 50 percent in the total cost with effective pasture programs.

Sheep can be efficient at converting forage into meat and wool. The following pasture alternatives and combinations allow the development of a pasture program where sheep can be on pasture for approximately 10 months of the year, if weather permits.

Most pasture programs for sheep must be based on perennial pastures. Perennial pastures are dependable and more predictable than annual forages; annual forages depend too much on successful establishment and management each year to permit complete reliance on them.

Perennial pastures provide a solid sod and good footing, even in wet conditions. Annual forages leave open ground where trampling damage and mud can cause severe damage to the crop during wet conditions. In addition, mud lodged between the toes of sheep eventually dries, cakes and leads to lameness.

Even with these limitations, the key to extended grazing periods is plantings of annual forages.

The type of production system (ewe/lamb or feeder lamb) and the time of year alternative feeds are needed must be considered to determine the crops you use. Numerous alternatives are available as sheep pasture during all times of the growing season.

Evaluate your resources and requirements to select the alternatives that best meet your needs. Both perennial and annual forages can be selected for use during each season.

Pasture alternatives based on perennial pasture usually have abundant forage available from cool-season grasses during May and June, and again in the fall. Supplemental pasture may be beneficial in early spring, midsummer and late fall, and early winter.

	<b>Seeding Rate</b>	<b>Seeding Date</b>	<b>Time of Use</b>	<b>Management Tips</b>
<b>Wheat</b>	1-1 1/2 bu	early to mid-August or mid to late September	late fall and/or spring for August planting; spring only for September planting	Leave several inches of growth on the August planting in spring grazing is desired. Do not graze September planting in fall; if grain is desired, stop spring grazing when plants joint, or yield will be greatly suppressed. Nitrate poisoning is possible with small grain high nitrogen fertilization.
<b>Rye</b>	1 1/2-2 bu			
<b>Barley</b>	1-1 1/2 bu			
<b>Triticale</b>	1 1/2-2 bu			
<b>Oats</b>	2-3 bu	early to mid-August or late March to mid-April	late fall or late May and June	When moisture is available, oat pasture can be an excellent double crop. Graze out completely; do not expect grain if grazing has occurred. Nitrate poison caution.
<b>Turnips</b>	2-4 lbs	mid-July to mid-August	late fall and early winter	Excellent double crop following small grazing. Thick stands cause small tubers that can cause choking. Can withstand temperatures as low as 15-20°F. Sheep will graze through light snow cover (up to six inches).
	1/2-1 lb	March/April with oats	late spring early summer	
<b>Rape</b>	1 lb	late March to mid-April w/oats or mid-July to mid-August w/turnips	late May and June or late fall, early winter	Can cause some bloat. Fibrous root system provides better soil stability and protection from erosion than turnips.
<b>Sudan</b>	15-25 lbs	May and June	late June to mid-September	Beware of prussic acid in short growth. Cut for hay if growth is too rapid for grazing alone. Hay can take one to three weeks to cure unless cut when growth is 36 inches tall. Stagger planting dates to coincide with grazing plan.
<b>Sorghum-Sudan Hybrids</b>	6-15 lbs	May and June	mid-July to freeze-down	See Sudan. Also, mow stubble at six inches after grazing to encourage new tillers.
<b>Pearl millet</b>	6-12 lbs	June	July to mid-September until frost	No prussic acid. Cut for hay if growth is too rapid. Stagger planting dates to coincide with grazing plan.

## **Early Spring**

Winter small grains, like wheat, rye and triticale, provide early pastures. These winter small grains can continue to be grazed out from May through late June.

Spring-planted oats begin to provide good pasture in late May and June. Perennial cool-season grasses, like smooth brome, orchardgrass and bluegrass green up early and can be used in early spring, but subsequent growth may be sacrificed if grazing is too heavy early in the season. However, if perennial cool-season pasture is abundant, the excess vegetation from the small grains may be used to 1) increase stocking, 2) harvest for hay, or 3) harvest as grain.

## **Summer**

Summer can be one of the most challenging forage production periods. Many forages are available, but the forage quality is often lower in summer than at any other time during the growing season. Perennial cool-season grasses, like brome and orchardgrass, grow little during hot, dry weather.

Irrigated perennial cool-season grasses maintain fair growth rates throughout summer, although when temperatures exceed 90°F even water cannot stimulate growth of these grasses.

Legumes, especially alfalfa, usually are more productive than cool-season grasses. If alfalfa is part of your pasture mixture, summer pasture might consist mostly of alfalfa. Also, alfalfa fields cut once for hay can provide much summer pasture. (See *bloat caution* under Summer Pasture).

Oats or an oats/rape mixture provide good pasture in June and July but will be unavailable later in summer. Perennial warm-season range grasses are productive in many areas, although sheep are quite selective in what they eat from these grasses. Stemmy, coarse growth is avoided, so leafy species are preferred.

Big bluestem, blue grama, buffalograss and sand lovegrass are some of the leafier, more desirable warm-season range grasses.

Excellent annual summer forages include sudan, sorghum-sudan hybrids and pearl millet. These grasses grow rapidly, have high yield, can be pastured several times and are most productive in July and August.

## **Late Fall and Early Winter**

Perennial cool-season pastures can be used effectively until feed is gone. Where available, crop residues like cornstalks and milo stubble provide good grazing while some grain and plenty of leaves remain. Oats planted in August can provide substantial late fall pasture until growth ceases due to a killing freeze. Winter small grains occasionally provide some late pasture if planted early and growing conditions are good.

Crops that can cut fall and winter costs are turnips and rape. These crops produce high tonnage and survive well under severe frost (20-25°F). After substantial freezing, sheep still can consume dried leaves as well as the root.

Turnips are high in moisture and sheep drink little water while grazing them. Sheep tend to eat the tops first, then the roots, until the ground is bare. Little ground cover remains if sheep are allowed to completely graze these species.

## **Animal Management Considerations**

### **Spring Pasture**

Weaned lambs on pastures are a concern. Consider avoiding pastures with weaned lambs born in January or February unless strict management programs are followed. Lambs 60-90 days of age are close to market weight. Lush pasture causes growth to slow due to change of feed. Parasite contamination is also a concern. Worm eggs hatch and larvae migrate to the plant, which then infects the lamb. A few warm days (15-17) can cause a heavy infestation of worms.

"Drying off ewes" (stopping lactation) should be done in the dry lot. Turning ewes to pasture makes it more difficult to stop lactation. If lambs are too young to wean and pasture is part of the program, a rigid parasite control program is a must.

### **Summer Pasture**

Internal and external parasites are the biggest concern when using summer pasture for sheep. Due to consumption of worm larvae and grass or feed being the intermediate host of the cycle, a rigid monitoring of the egg count (collect fecal samples for evaluation by your veterinarian) for internal parasites is essential.

External parasites (wool maggots) are associated with loose feces and contaminated wool. Lush pasture and wet wool increases the hazard of fly strikes. Sheep should be short fleeced or crotched (shearing wool from legs and crotch of ewes) before turning to lush pasture.

If alfalfa or an alfalfa-grass mix is part of the pasture program, bloat is a potential hazard. Using a bloat-guard surfactant block started three days before turning to pasture to prevent bloat has been tried with some success. Most clovers can cause bloat, also. The legumes birdsfoot trefoil, cicer milkvetch, and sainfoin do not cause bloat.

If ewes are on legume or legume-grass pasture during breeding season (August-October), a lowered fertility rate is expected. This is due to a high estrogen level in most legumes that decreases the implantation rate of embryos.

If sudan or sorghum-sudan pastures are grazed, drought stress can increase the hazard of prussic acid poisoning. Allow these crops to become 18" high before grazing to decrease some of the prussic acid concern.

### **Fall Pasture and Winter Management**

Milo and corn stalks are excellent sources of roughage and grain. However, corn and milo stubble grazing can cause acidosis or compaction, as well as enterotoxemia.

Acidosis (grain overload) and compaction are due to rapid consumption of large amounts of grain, and enterotoxemia (overeating disease) is due to a continuous high consumption of grains.

Acidosis usually is caused by ewes consuming a large amount of grain the first day when turned to the stalks. Fatality rate is high. To control this problem, limit grazing time (one-half to one hour/day the first week) until the sheep are used to the high consumption rate.

Enterotoxemia may be controlled by vaccinating ewes three to four weeks before turning them to stalks. Vaccinating for enterotoxemia **will not** prevent acidosis or compaction.

Use caution when grazing stalks during the last six weeks of a pregnant ewe's gestation period. There may be insufficient energy and other nutrients in the stalks to meet the pregnancy needs if stalks were grazed earlier and the more nutritious grain and leaves removed. This may contribute to lambing paralysis, weak lambs and low milk production. Supplement energy, protein and minerals under this type of management.

When turnips are used in the rotation, keep the planting rate low (two to four lbs./acre). High planting rates cause smaller tubers. Large tubers reduce choking and permit extended grazing days.

Solid-mouthed ewes will get adequate volumes of roots for their requirements. A poor-mouth or broken-mouth ewe cannot consume tubers adequately at the end of the growing season.

When forage appears to be sparse at the end of the grazing period, offer small amounts of good quality hay to the sheep. When they consume about two lbs. of hay/day, other sources of feed should be considered to meet their requirements.

## **Grazing Management**

Sheep efficiently convert forage into meat and wool. Part of the efficiency is due to their ability to be selective in plants and parts of a plant they graze. Selective grazing allows sheep to consume the most palatable parts of the plants, and these palatable plant parts usually are the most nutritious.

Selective grazing is highest when sheep have access to the entire pasture. They can seek out preferred plants and plant parts from a large area when abundant forage is available.

Unfortunately, continuous grazing of the entire pasture can reduce productivity of both pasture and sheep in the long term. All pasture plants need an opportunity to regrow and recover from stress and injury caused by grazing.

Plants get no rest under continuous grazing because sheep selectively graze off young, succulent regrowth soon after it develops on a plant, prohibiting recovery and increasing plant stress. Repeated grazing of the same plant soon causes the plant to become weaker, lose vigor and reduce yield.

As a result, less forage becomes available for grazing and sheep are forced to consume lower quality forage and reduce their intake, especially if excess pasture is not available.

In contrast, if sheep are prevented from consuming regrowth soon after it develops, the plant produces more leaf area, more yield, and is able to recover rapidly for the next grazing. Rotational grazing is necessary to control sheep this way.

Rotational grazing most commonly is accomplished by using independent pastures and/or cross-fencing. Perennial pastures can be cross-fenced to develop several smaller areas to graze for short periods of time before moving sheep to a new pasture. Separate pastures of various alternative annual forages can be grazed for brief periods of time to provide rotational effects, and these annual pastures can be cross-fenced themselves to permit rotational grazing within them.

Rotational grazing is most necessary on perennial pastures, especially if several pasture species like

smooth brome and alfalfa are mixed together in the pasture.

Without rotational grazing, sheep selectively graze plants they prefer, and avoid other plants. Soon the preferred plants are weakened and the avoided plants crowd them out. As a result, only plants less desirable to the sheep are available for grazing at a future date.

Rotational grazing forces sheep to consume some of all plants and allows all grazed plants to recover and regrow while sheep graze other pastures.

Plants vary in the way they respond to rotational grazing. Legumes like alfalfa respond favorably to rotational grazing because their regrowth usually comes from crown buds located at the soil's surface. Substantial time is needed before this new growth is ready for another grazing.

Many perennial grasses maintain some leaves near the soil surface that are difficult to graze. These leaves enable the grass to maintain some leaf area and photosynthesis even during continuous grazing. Thus, while rotational grazing is desirable, it is of less benefit for perennial grasses than for alfalfa.

Annual grass forages regrow primarily from above ground tissue or buds at the soil surface. Annual grasses often need more leaf area remaining after grazing than do perennial grasses to encourage rapid regrowth, because annual grasses have less root storage of nutrients to help stimulate regrowth.

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