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Sheep Management Basics
It All Starts with Grass

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Introduction

Ruminant livestock – cattle, goats and sheep – have an amazing capacity to convert grass and other forages into meat, milk and fiber. By grazing on lands that won't grow a cultivated crop, ruminants convert sunshine, rain, carbon, and soil (in other words, grass!) into products we can use. By working with nature, we can greatly reduce the need to provide supplemental feed to sheep and other grazing animals. With the exception of flushing, when managers often provide a bit of supplemental protein and energy, sheep can typically "harvest" everything they require nutritionally by grazing. It all starts with grass. This publication offers a guide to basing foothill sheep production on the annual forage cycle.

Matching Supply with Demand

We operate in a Mediterranean climate in our part of the Sierra foothills. Our annual weather pattern is typified by cool, wet winters and dry, warm summers. Accordingly, our annual grasses grow in a distinctive and generally predictable pattern. Typically, we get a germinating rain in mid-October or early November. Our annual grasses start growing and continue to grow until the days get too short and the soil gets too cold – usually just before the winter solstice. During this winter dormant period, the grass doesn't grow much (if at all). By early February, however, the days are long enough, and the soil warm enough, that our grasses and broadleaf forage plants start growing slowly again. By March 1 – if we've had normal precipitation – our grass is ready to rip! In most years, we have our greatest quantity of highly nutritious annual grass from early March through mid-May.

On the demand side, ewes require the greatest quantity of highly nutritious forage in the last third of their pregnancies and the first 6 weeks of their lactation (that is, the 6 weeks after they give birth). Ewes that are about to give birth will consume nearly twice as much grass at this point in their reproductive cycles as they will when they aren't pregnant or nursing lambs. They require so much forage during this phase, in fact, that stocking rate increases by almost 100 percent – even though we haven't increased the number of sheep on our pastures.

Logically, we should try to match supply with demand by timing our production system so that the ewes are giving birth when the annual grasses begin to grow rapidly. In our region, this means that ewes should start lambing in late February and finish lambing around April 1. By matching the production calendar with the forage calendar, we can reduce the amount of supplemental feeding necessary to maintain animal health and performance. In addition to matching forage supply with forage demand, this decision allows us to map out the rest of the tasks in our production year (see the table on page 2).

As annual grasses mature and die in the early summer, forage quality on annual rangelands declines. Separating groups of sheep can ensure that those animals with the greatest nutritional demand (like growing feeder lambs) are grazing on the highest quality forage. Supplemental protein and/or energy may be necessary to help sheep utilize dry forage or prepare for breeding. More on this later!

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FORAGE QUALITY AND SUPPLEMENTAL FEEDING

Not all forage is created equal! During the course of the growing season, forage on our annual rangeland varies in its protein and energy content. On annual rangeland, we typically have our greatest quantity of highly nutritious forage in late April and early May. Protein and energy levels decline rapidly as annual grasses mature and die. The nutritional quality of irrigated pasture, on the other hand, generally peaks in June. Following the "summer slump" during the hottest months of July and August, irrigated pasture forage will rebound slightly in the early autumn before going dormant for the winter.

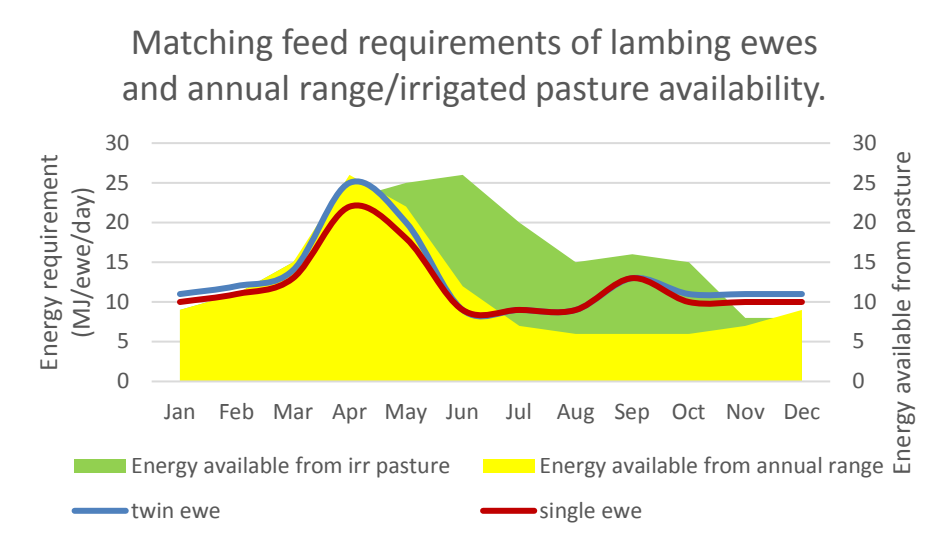

Table adapted from B. Hall et al. (2012). *Sheep – the simple guide to making more money with less work*. Sheep CRC and Department of Agriculture and Food Western Australia.

We can utilize less nutritious dry forage in the summer and fall months if we provide supplemental protein to our animals to feed the rumen microbes. We can also give our ewes a nutritional boost prior to breeding by moving them from dry forage to irrigated pasture and adding supplemental energy, usually in the form of grain. This "flushing" process can increase the percentage of multiple births.

PRODUCTION CALENDAR

Once we understand our specific forage cycle and the associated nutritional variation in our rangeland and pastures, we can develop an annual production calendar that includes key mileposts like flushing, breeding, vaccinating, lambing, shearing and weaning. We can also plan for periods during which we will need supplemental protein, hay or grain. In other words, our entire management system starts with grass.

Sierra Foothills Forage and Production Calendar

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ewes	Mid/Late Gestation		Early Lactation	Mid Lactation		Late Lactation	Maintenance (+Protein)		Flushing (+Energy)	Breeding (+Energy)		Early Gestation
Rams	Maintenance								Flushing (+Energy)	Breeding (+Energy)		Maintenance
Feeder Lambs							Growth					Harvest
Repl Ewes	Growth			Growth			Maintenance (+Protein)		Flushing (+Energy)	Breeding (+Energy)		Maintenance
General Husbandry Activities	Vaccinations		Lambing			Shearing		Weaning				

Key

Annual Rangeland
Irrigated Pasture

For more information

- Annual Rangeland Forage Quality (UCANR Publication 8022): http://anrcatalog.ucanr.edu/pdf/8022.pdf
- Feeding Ewes (Sheep 201: A Beginner's Guide to Raising Sheep – University of Maryland): http://www.sheep101.info/201/feedingewes.html