Using annuals to extend the finishing season

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Climate constrains the duration of the pasture finishing season for beef on perennial pastures all across the country. Both warm-season and cool-season annual forages are powerful tools for extending the quality finishing window beyond what can be provided by perennial pastures in many areas. Annual forages are almost always more expensive per grazing day than are perennial pastures, so they must be managed judiciously to optimize return.

Winter annual forages provide the most cost effective way of extending the late-season finishing window in almost every geographical location in the US. Winter annuals can extend high quality grazing much later into the fall and winter as well as providing quality forage earlier in the spring. From high mountain valleys in Idaho to the coastal plains of Texas, winter annuals are a valuable part of the forage chain.

Summer annuals can be used in many areas where perennial warm-season grasses provide the primary forage base. Perennial WSG tend to have low forage quality and cannot support the necessary rate of gain for a high quality finish during the summer months. Annual warm-season grasses from crabgrass to corn can enhance summer forage quality in the hotter parts of the US. They can also be used in northern climates where cool-season pastures may experience a summer slump period.

How and when you use winter annuals depends on your location and what other pasture resources you have available. Winter annuals play a far greater role in finishing programs in the South than they do in any other region. Hot summer temperatures and the heat stress it places on cattle limit the finishing window to cooler seasons all across the South. Winter is the season of opportunity in the South and winter annual forages provide the foundation for most of the winter beef production.

In the Intermountain West, winter annuals can add a month or two to the Autumn finishing window but won't provide quality forage through the winter as they do in the South. The same plant species might be used in the two locations, but they behave quite differently and serve a different purpose. It's critical to know what species will best fill the need in your location and the local management required to capitalize on the opportunity. Annual ryegrass might not be planted in Texas until October but the same variety needs to be planted by mid-July in Idaho or Montana for grazing in October.

Small grains and annual ryegrass are the easiest of the winter annuals to establish and manage for grazing. Most of the species can be planted either as monocultures or mixtures. For the Midwest, I particularly like a mixture of oats and annual ryegrass. The oats come on rapidly in the fall and provide high quality grazing until frost. Annual ryegrass comes a little later and stays green as the oats are frosting. While oats did not survive the winter, the annual ryegrass did and would be the first pastures greening in the spring to provide early season grazing. Numerous guide sheets are available

from Cooperative Extension and seed companies to provide varietal recommendations and seeding rates and times for your area. Because winter annuals are used across such a wide range of environments, it is not possible to cover all the nuances of local management in this format.

Winter annual legumes are the second class of most commonly used winter annual forages. In general these species don't provide much forage on the front side of winter but provide early high quality forage in the spring, plus, they are capable of fixing significant quantities of nitrogen that will become available for summer pastures. Arrowleaf, crimson, berseem, and ball clover are common winter clover species. Ball clover has the greatest fall production and can help out on the front side of winter more than any other legume. Many of the winter annual legumes do not survive severe winter so their use is limited to the South and lower Midwest. Hairy and common vetch are two other winter annual legumes that can be used from the Deep South into the Midwest and Northeast.

Brassica species such as turnips and kale can also be used for pasture finishing, although there is a risk of vegetative flavoring in the meat if they compose too much of the diet. Mixing the brassica with a small grain or ryegrass often gives better results than using them alone. Research studies in Missouri have found kale to yield 3-5 tons of forage dry matter in the late fall. Brassicas can quickly lose quality with several killing frosts so they should be used in late fall or early winter, depending on location. Because they establish quickly and can usually be grazed within 50-70 days of seeding, they are a good transition crop between perennial pastures and winter annual grasses.

All of the winter annual species perform best with rotational grazing. Even turnips can regrow if only moderately grazed in the first cycle. In the deeper South where winter annuals may continue to grow most of the winter, set stocking at a moderate stocking rate has yielded very good animal performance and kept the pastures vigorous. If forage supply becomes limiting, intake will drop rapidly and finishing gains may no longer be achieved. If you try set stocking winter annuals, carefully monitor forage residual and quality throughout the winter.

Most producers using winter annuals for finishing pasture use very intensive strip grazing to try to keep intake high while allowing the forage an opportunity to regrow following grazing. As with almost all annual crops, once seedhead or flower development begins forage quality drops below finishing requirements. Legumes do maintain somewhat better forage quality with maturity than do either the grasses or brassicas. Plan to have the crop fully utilized before the onset of maturity to maximize gains.

Which summer annual forage you choose to use is closely tied to your latitude. Green-grazed corn is fast becoming the most popular summer annual forage for pasture-finishing. As long as the forage is used before ears begin to form corn is just another warm-season grass and is accepted in most pasture-finished protocols. Corn is used from Mexico to Canada and all across the US for finishing pastures.

While some graziers plant corn for grazing with almost as many inputs as corn being grown for grain, others take a more minimalist approach and grow it in a mixture with summer annual legumes, red clover, and/or other legumes and forbs. The key factor is just ensuring the corn crop gets established and has a jump on companion crops or 'complementary' weeds.

Because of the height corn can achieve, strip grazing it with electric fence can be challenging. The two most common approaches are either to knock a row down with an ATV and then string the fence through that strip or leave some skipped rows when the corn is planted to allow easy lanes for erecting the fence.

Forage sorghum, dwarf grain sorghum (milo), sudangrass, or sorghumXsudan hybrids are all viable summer annual options. However, all of these forages have the potential for prussic acid poisoning and so are less attractive to many graziers than is the relatively safe corn plant. The advantages of the sorghum family is they will grow on somewhat poorer soil than does corn and are more drought hardy than corn.

Crabgrass is probably the lowest cost and easiest to graze of all the warm season annual grasses. It is a naturally reseeding weedy species that thrives with very little management. It has no toxicity problems and maintains nutritive value even as it matures. Because it is a relatively low growing grass, it is also very easy to manage with electric fences compared to taller growing species such as corn or sorghum.

Any of the above mentioned warm-season grasses can be grown in conjunction with cowpeas and most other warm season annual legumes. Adding legumes to the mix reduced or eliminates need for any N fertilizer and can raise the nutritive value of the mixture above annual WSG monocultures.

All of the annuals, winter or summer, are best utilized with intensive strip grazing or rotational management. Harvested forage per acre is often doubled or tripled with intensive management compared to set stocking. This is particularly true with wet grazing conditions where trampling waste can be very high with unrestricted grazing. Crops that are not expected to regrow for a second or third grazing can be fully utilized in a single grazing event as long as forage quality is high enough to support finishing gains. If plants have matured beyond optimal quality stage, allowing finishing animals to only utilize 20-30% of the crop and having cows or ewes clean up the remainder is a good strategy. Trying to force finishing stock to fully utilize an overmature annual crop is a sure way to produce low quality meat.

Using a series of several annual crops can spread out the maturity window and provide more days of quality grazing than any one species is likely to provide. Individual varieties within a species may have enough variation in maturity characteristics to justify seeding more than just one variety. There is plenty of maturity difference across species to extend the window of finishing quality pasture. An extended supply of finishing quality pasture is the product of extensive planning and intensive management. It will not happen by accident.