

Forage Options Expand for Spring Peas

New generation of spring peas prove ideal for high yield, blended forage production

While savvy milk and beef producers have long appreciated the nutritional value of forage peas in a blend with small grain annuals the commonly grown spring pea varieties have failed, up until now, to live up to their potential.

One of the primary reasons for this is that historically the only spring peas available for blending in forage mixes are genetically programmed for rapid growth transforming themselves from seed to flowering plant in as little as 60 days. “This leaves little time for the plant to develop the kind of leaf mass we want in a forage pea,” says Kurt Braunwart of ProGene LLC, owner of the Washington-based plant research firm. “Most of the plant’s vigor goes into producing flowers then seed.”

Similarly one of the most frequent grower complaints regarding the blending of conventional peas with small grain forage annuals has been in matching maturity dates in order to optimize volume on one plant without sacrificing quality on the others. “Conventional peas tend to flower and mature earlier than forage annuals like oats and triticale,” says Braunwart, “This means you are having to make a choice between quality and quantity when peas are included in a blend.

Breeding for Blend Compatibility

In spite of these limitations plant researchers have been optimistic about the role annual peas will play in the next generation of forage blends.

Replicated studies in the 1980’s have already shown that when peas are added to oats the overall forage quality is markedly improved by increasing protein content 3 to 5 points while reducing NDF by 4 to 8 points. Adding peas to barley increased protein 2 to 4 points and reduced NDF by 5 to 9 points.

For forage pea breeders like ProGene’s Mike Wood the real challenge has been to develop a forage pea that has an established maturity date which is closer to its prospective companion crop. “We needed to slow down the maturation process of our new pea so that it fell in line with our annual small grain forage varieties,” he says adding that doing so would give the pea plants the time they needed to optimize their forage production.

In order to accomplish this task Braunwart’s team began crossing his leading spring peas with winter varieties. “Unlike spring peas, winter varieties take longer to establish and therefore produce more leaf mass,” he says. “We believed that would translate into better tonnage.”

Another winter pea trait Braunwart hoped to introduce into his new spring variety was stooling capability--- the ability to produce more than one shoot off a single plant crown.

New Pea, More Forage

After two decades of breeding effort what began as a premise has been transformed into a reality in Flex, ProGene’s latest spring pea variety release. We have successfully transferred the sought after winter traits into Flex,” says Braunwart. “The plant consistently matures later than other spring pea varieties and produces significantly higher yields.

Field trials conducted between 2007 and 2010 comparing the performance of Flex, ProGene’s new generation of spring forage pea, with other commonly available spring varieties, confirms its superior forage yielding capabilities.

Dave Wilson of King’s AgriSeeds based in Lancaster, Pennsylvania has included Flex in his company’s test plots. “We have observed that the Flex has quicker growth and more biomass than the other spring peas in our test plots,” he says. “More biomass means higher yields and that is priority one, two and three with our forage growers.”

He notes that Flex’s ability to emerge and grow quickly is important when it is blended with small grain annuals. “Small grains such as oats and triticale can be quite competitive,” says Wilson. “It is very important that the variety of the pea selected for a blend not only has early vigor in its germination and emergence but is capable of maintaining its competitiveness with the congruent growth of the small grain in the mix.”

Wider Harvest Window

Byron Lannoye of Pulse USA has grown Flex in test plots in Bismarck, North Dakota. He sees Flex's later maturing dates as a real advantage when it is used in a blend with annuals like forage oats. "Typically when you plant other forage pea varieties with oats when the peas get past the flat pod stage and are ready to be cut the oats still have a way to go," says Lannoye adding that with a longer maturing pea like Flex growers benefit from higher oat yields without compromising the quality of the pea forage.

But that isn't the full extent of the improvements Flex brings to forage production says Braunwart. In addition to producing more tons per acre than its competitors both as a single crop and in a blend there is significant improvement in palatability over the older varieties.

Better Palatability

Braunwart attributes this to the absence of anthocyanin in his new variety. Anthocyanin is the pigment producing flavanoid responsible for the purple flower and stem color in many varieties of spring forage peas. It also contributes to a plant's bitterness. "The less anthocyanin a plant has the sweeter it is," he explains. "While the color itself doesn't affect the flavor the chemical that creates the color does."

With this knowledge Braunwart spent the last two decades selecting for light colored plants with little or no anthocyanin. He points out that with Flex being one of his company's proprietary white flowered pea varieties, those who grow it are the direct beneficiaries of this comprehensive breeding program. "With cattle, sweeter feed means higher intake, higher weight gain and more profits," says Braunwart. "To the cows it is nothing less than candy."

Spring Forage Pea Averages 2007 -2010

<u>Yield:</u>	<u>Forage Yield</u>		
	<u>Seed Size</u>	<u>Flower</u>	<u>Wet Tons</u>
<u>Variety</u>	<u>seeds/lb</u>	<u>Color</u>	<u>per acre</u>
<i>Flex</i>	<i>2,929</i>	<i>white</i>	<i>29.88</i>
<i>Nutrigreen</i>	<i>2,679</i>	<i>white</i>	<i>25.85</i>
<i>Magnus</i>	<i>1,948</i>	<i>colored</i>	<i>22.26</i>
<i>Journey</i>	<i>2,454</i>	<i>white</i>	<i>19.15</i>



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