



CLOSING THE FEED GAP

Smart approaches to feed production

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Following the poor harvests in 2018, many farmers will be unable to eke out feed supplies until the next maize harvest in 2019. Various solutions are available to remedy this situation. By growing ultra-early maize varieties, it is possible to harvest earlier in the season and so avoid feed gaps. The main benefit of these ultra-early varieties is that they can be used flexibly in crop rotations. The whole-crop silage (WCS) mix Legu-Oats-WCS Plus also offers some interesting possibilities.

Combining Ultra-early maize with grass – two options.

The first and very good method is to sow ryegrass after an ultra-early maize crop. If the maize can be sown in April, it can be harvested in early August, leaving enough time to produce a very good grass sward. The high proportion of flint maize in these varieties makes them particularly tolerant of cold and ensures a very rapid early growth. Once the maize has been cleared, a grass ley mix containing annual ryegrass such as COUNTRY 2053 can be sown. Given the right conditions, the first cut can be taken after six to eight weeks.

The second tried and tested method is to grow an ultra-early maize crop undersown with grass. When the maize is between the 6 and 8 leaf stage, the grass is sown together with a late application of slurry or by a pneumatic fertiliser spreader. This requires an application rate of around 15–20 kg/ha. It is also advisable to sow the grass two to three weeks after applying herbicide to the maize. With this cropping system it is important to mulch the maize stubble thoroughly after the harvest to prevent it getting into the grass silage. Since undersown grasses have more time to become established, they mature earlier and can be cut after around five to six

weeks. This crop rotation produces high-quality maize silage and highly digestible, protein-rich forage grasses. Up to two cuts of grass can be obtained if conditions are optimum. Once the grass silage has been cut, a winter crop can be sown or the grass can be used for greening until the next spring crop is sown.

Other uses for ultra-early maize

Other crops can be combined with ultra-early maize varieties as part of this arable cropping system. One attractive option is to grow winter rape after maize. This unusual crop rotation generally works very well, provided the maize stubble is first mulched and then ploughed in. Ploughing also reduces the risk of previously applied maize herbicides affecting the oilseed rape, which may be more or less susceptible to the chemical, depending on the active ingredient used. Rape varieties suitable for later sowing such as Bender are recommended to allow sufficient time for tillage.

Late sowing after speciality crops or early barley is another option. This approach takes advantage of the fact that ultra-early maize varieties break up intensive cereal rotations and thus inhibit the spread of cereal diseases (e.g. eyespot, take-all disease).

Legu-Oats-WCS

Growing mixes is an established method that offers many benefits. The species within a mix are mutually beneficial and suppress weeds by providing more rapid shading of the soil. Since oats are the main component in the mix, it is especially important to select a premium quality variety.

YUKON is a particular healthy and resilient mix. The ratio of carefully selected species in the balanced mix has proved effective, making this cropping method also suitable for new entrants. It can be used in diverse ways: Originally developed as a substrate for biogas plants, more and more farmers are now starting to use the mix as animal feed as well. Its feed values of approx. 5.5–6.0 MJNEL/kg DM are however underrated when comparing it with maize, which is borne out by its excellent palatability and intake by livestock. The spring crop mix consists mainly of oats, common vetch and field peas undersown with grass (also available without grass). It can be sown from early March to mid-April. All components are drilled at the same time. This saves time and costs and means that the grass catch crop is already established when the whole-crop silage is harvested. Weed suppression is quick to take effect due to a very rapid canopy closure, eliminating the need for herbicides. Legumes and oats complement one another and grow well together.

Harvesting the whole-crop silage

The cereal can be harvested when it reaches the soft stage. At this time the higher moisture

Tab. 1: Maize rotation

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
S 210 maize					S 210 maize							
S 250 maize					S 250 maize							
Ultra-early maize					Ultra-early DSV			TerraLife® MaisPro DT Greening 50				
					Ultra-early DSV				Winter rape			
					Ultra-early DSV			COUNTRY 2053 1–2 CUTS			Winter cereals	
			Legu-Oats-WCS Plus					Under-sown crop				

content in the legumes balances out the higher DM content of the cereal and advantage can be taken of the yield increase from the milky to the soft stage. It is advisable to harvest with a whole-crop silage header or a row-independent maize header.

A welcome dose of organic fertiliser

The Legu-Oats-WCS mix is available with or without undersown grass (Plus = undersown grass). Ideally, farmers should opt for the Legu-Oats-WCS Plus version since the follow-on crop is sown at the same time: Despite a low seeding rate, the undersown grass grows so well that by autumn it has produced a dense sward of annual and Italian ryegrass which can provide high-quality yields until the following autumn.

The whole-crop silage is initially fertilised as the rye whole-crop silage (approx. 140 kg N/ha minus N-min). Once the whole-crop silage has been harvested, the grass catch crop is ready to go and gets a welcome dose of approx. 60–80 kg N/ha (minus N-min). Further nutrient inputs can then be added after each cut. Grass makes very efficient use of the nutrients in the slurry. It is one of the few species which utilises nutrients in the summer months and may continue to be fertilised until its removal. The cultivation of Legu-Oats-WCS Plus mixes allows farmers to spread their slurry applications over a wider window and so reduce the slurry levels in their pits.

Many farmers find that extending the slurry spreading window and using slurry more efficiently not only breaks up the soil between crop rotations but also benefits the WCS mixes.



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