

# Cover cropping brings yield and cost benefits for award-winning farmer

ALEX MILNER-SMYTH

I spent my last day of touring farms in the US with Nathan Lowder, a District Conservationist from the Stanly County Natural Resources Conservation Service in Albemarle, North Carolina.

Nathan took me to see Curtis Furr of Big Bear Creek Farms, which was named the 2012 Conservation Family Farm of the Year by the Stanly Soil and Water Conservation District, with Curtis commended for his commitment to the environment through no-till and diverse cover crops.

Curtis grows cotton, corn, soybeans, popcorn and a limited amount of small grains on 400 ha of owned and leased land about 60 kilometres east of Charlotte.

His father and grandfather started a move to no-till in the late 1960s with a second-hand John Deere Grassland drill and have been 'strictly' no-till since the early '80s.

Curtis was introduced to the idea of diverse cover crops when he visited Jay Fuhrer in North Dakota. So convinced was he that cover cropping would have significant benefit for his enterprise that he ordered the seed he needed while waiting at the airport for his flight home.



A 24CM LONG EAR OF CORN FROM CURTIS FURR'S BUMPER 15 TONNE CROP.

The main issue he was aiming to overcome was soil erosion due to a combination of hilly land and a lack of residue after cotton harvest. His first cover crops were a mix of rye, crimson clover, radishes, winter peas and vetch, and during the first two years, soil organic matter increased by 1.5%.

Some of the increase in organic matter

could be attributed to annual applications of chicken litter, which he first used in 2008, but Curtis is quick to point out that permanent ground cover offers additional benefits. "Cover crops hold the moisture in the ground and build the nutrients too. But I have to say that manures and cover crops go hand in hand with each other".

Chicken litter is sourced from a local farm and applied at a rate of 3 t/ha before corn is planted April. Despite the labour involved with trucking, stockpiling, loading and spreading manure, Curtis sees it as an integral part of his system.

Since he began cover cropping, his corn yields have increased 5-10%, cotton yields are up 10-15% and he has reduced synthetic fertiliser applications by 15-20%.

Nathan predicted that one patch of corn we looked at would yield more than 12.5 t/ha, almost 25% more than the 2013 US average corn yield of 9.97 t/ha. Since then the crop has been harvested and Curtis reports his yield monitor showed rates of up to 15 t/ha in some parts of the paddock.

Curtis has also found he can reduce his use of synthetic fertiliser, which is applied using variable rate technology at rates



ABOVE: CURTIS FURR WITH AN EAR OF CORN.

RIGHT: SADDLE BAG TANKS MOUNTED ON THE SIDE OF THE TRACTOR STORE SPRAY FOR THE DESICCATION OF COVER CROPS.





RESIDUE FROM THE PRECEDING COVER CROP PROVIDES SIGNIFICANT COVER FOR THE SOIL, FOR THE LIFE OF THE CORN CROP, REDUCING SOIL TEMPERATURES AND EVAPORATION RATES.

based on soil test data. He recently bought his own soil testing equipment and intends doing individual tests of two-acre blocks within paddocks and possibly one-acre blocks on poor-performing areas of his farm.

He's noticed a significant reduction in weed issues, which for Curtis are generally pig weed (*Amaranthus palmeri*) and morning glory (*Ipomoea indica*). On paddocks with high weed burdens he uses cover crop mixes heavy in rye, which has the highest alleopathic effect of any small grain.

### Manures and cover crops go hand in hand with each other.

Cover crops are desiccated using a 9.1 metre Cultipacker with a rear-mounted boom spray and a set of rollers towed immediately behind for an additional knock-down. Spray chemical, usually a tank mix based on 2,4-D, is carried in saddle-bag tanks on the sides of the tractor to eliminate the need for a spray cart.

Curtis has found this set up to be the most effective and efficient way to kill the cover crop without the need for multiple passes.

Curtis points out that, as well as the reduction in fertiliser and herbicide and the increase in crop yields, there is a link between cover cropping and the

requirement to grow more food from less land. "As time goes on and development comes in we're going to have less land to make a living on and diverse cover crops is one way to help improve productivity".

*Interested in learning more about Curtis Furr's farm? Check out the videos available on-line:*

*<http://www.youtube.com/watch?v=XNY2WrFVQjs>  
<http://vimeo.com/28713338>*



RIGHT: POPCORN IS PART OF CURTIS'S DIVERSE CROPPING PROGRAM.



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