# Upgraded drier handles bigger combine's input

## Upgrading both combine and drier has improved harvest efficiency on a Lincolnshire farm, as **Peter Hill** reports

Increasing combining capacity might normally be expected to put more pressure on the farm drier, not less. But Lincolnshire grower Andrew Mitchell has done the opposite after installing a new continuous-flow drier by also upgrading to a John Deere 9780 CTS combine.

"It was tempting to go for a more ambitious grain drying and handling upgrade that would have given us spare capacity for years to come," he says. "But we decided on a more modest approach that involved changing the drier to one with greater throughput and changing to a bigger combine to ease its workload."

The drier in question is an Alvan Blanch Double Flow drier, which is much more efficient, has a greater throughput and is a whole lot easier to operate than the 40-year-old Cascade drier it replaced.

The basic design goes back to the Cascade principle developed in the 1940s, so it doesn't look very different, but Alvan Blanch has brought it up to date with improved airflow and modern sensor and control technologies.

Removing 5% moisture from grain at 20%mc, it can handle 18t/hr – 50% more than the old machine. Meanwhile, the JD combine bought for this year's harvest delivers about 25% more cutting capacity than its predecessor, the New Holland TX66.

Upgrading to the JD has reduced the number of harvest days required to combine Denton Farming Company's 280ha of wheat, 100ha of oilseed rape, 50ha of winter barley and 60ha of spring barley. But importantly, it also allows the farm to start cutting an hour or so later in the morning, says Mr Mitchell. "By that time, the sun has taken some of the moisture out.

**Alvan Blanch Double Flow 'S' type drier uses a long-established drying method brought up to date with electronic monitoring and control technology.**

"To take full advantage of that in a good season, we rearranged the handling system so that, if the grain is dry enough off the field, it can bypass the drier and go straight through the cleaner into store."

When it is needed, the new drier will do the job more efficiently and without the constant manual control and operation that the old one needed.

"I like the system – we're used to it and comfortable with the way it works," says Mr Mitchell. "And the new model certainly has a number of improvements."

Grain enters the top of the machine – in Mr Mitchell's case via a 5t capacity intake hopper with fill sensors linked to the pit elevator that feeds it – and is then taken along two inclined louvered panels by a chain-and-slat conveyor.

Conveyor speed, the adjustable depth of the crop bed and the amount of heat applied determine the drying rate and temperature, all of which is set up on a central electronic control panel. Probes in the grain bed detect changes in crop temperature relating to the moisture content, and the control system uses this information to adjust the conveyor speed.

Adjustments are immediate and infinitely variable, which, combined with the positive movement of grain through the machine, results in a consistent drying performance as well as a consistent discharge rate that eases pressure on post-drier handling equipment.

"The automatic controls work well," says Mr Mitchell. "With the old machine, you could have something go wrong when your back was turned and end up with grain all over the place. This one is can be set up and left to get on with it. Various protection systems will shut it down if something is not right."

Apart from being bigger and having more sophisticated controls, the most noticeable changes from the old machine include the twin fans – which reduce start-up load compared with the single unit fitted previously – and the larger cooling section.

Fuel economy is reckoned to benefit from the air recirculation system: cooling air drawn in from outside and warmed by the hot grain is channelled into the drying chamber. Here it accounts for about one-third of the total hot-air intake, so less applied heat is needed to achieve the required drying temperature.

**Andrew Mitchell: "Increasing combine capacity so that we can cut more often at lower moisture has eased pressure on the drier, so the 50% increase in throughout should be enough for the time being."**

"I was sceptical at first and I've not taken any recordings to prove it works, but it certainly seems logical that this arrangement should reduce fuel bills," says Mr Mitchell. "Either way, the cooling system is very efficient. You can dry the crop quickly at high temperature when that's appropriate and get the grain cool again before it goes into storage."