

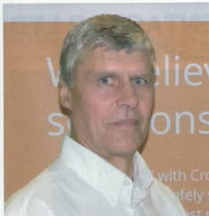
# Your potato store needs YOU!

CIPC issues were the dominating theme at Potato Council's 50 years of Storage Research event at Sutton Bridge Crop Storage Research (SBCSR) in Lincolnshire recently, from where **Dominic Kilburn** sent this report.

A huge amount of potato stores are simply not 'cutting it' at the moment and anyone not prepared to invest is potentially putting their high value crop at risk.

That was the over-arching thought from Ray Andrews of Norfolk-based Crop Systems – one of the leading businesses in crop storage technology and sponsor of the SBCSR event to celebrate 50 years of Storage Research.

"There's no miracle cure to replace CIPC but what value can you put on losing it?" he questioned. "No long-term storage, weight loss due to sprouting, loss of markets. It's a fantastic product if applied correctly, and the retailers want it, albeit with low residues, but why is it that a potato store is not highly valued – why, when such a high value crop totally relies on good air distribution within the store?"



Crop Systems' Ray Andrews.

Ray continued: "We have got to start convincing growers that they have to do more. If you get the airflow right in the store your refrigeration unit can be 20–25 per cent more efficient. Not only that but condensation will be reduced. Add to that a reduced risk of rotting, reduced energy used to operate the store and efficient and effective CIPC application.

"It's a win, win situation," he stressed.

He estimated that, typically, the potatoes in two out of three stores in the UK only received 30 per cent of the air they should, the rest either short circuiting or going through the potatoes nearest to the fans. "So for all these years we've been treating the stores according to that 30 per cent. If we actually started

distributing the same amount of air throughout the store, no matter how fast or how slow, then we will achieve a major breakthrough in the efficiency of everything related to potato storage, including CIPC applications."

However, to do that requires investment, he pointed out.

"Potato stores may run for 10 years or more before it's realised that they are going to cost money to get them upgraded, sometimes just a few pounds per tonne will do the job, sometimes stores need major refurbishment.

"The trouble is much of the industry doesn't want to know; a potato store is seen as a low value part of the equation. If it's a shiny piece of machinery they understand that it depreciates in value and that it will need replacing at some point," he said.

"Growers are prepared to spend £250,000 on upgrading a harvester, but nothing on a store," he stressed. "They buy seed, a de-stoner, a harvester and grading equipment, and then they put their high value crop in a poorly ventilated store and hope for the best!

"Everyone is saying that we've got to sort out the problem of CIPC, but it's not the CIPC – it's the stores. The simple fact is that if growers are not getting their CIPC to the right places in the store then they are not getting air or cooling to the right places either. If it's not right for CIPC then it's not right to store potatoes."

## Case study

Ray provided the case study of a recent proposition to upgrade a 2,500t long term potato store which would cost the grower £84/t (£8.40/t over a 10 year period).

"When you start to calculate the savings made in CIPC applications, energy, crop weight loss and wastage, as well as box wastage, you start to see the benefits – and that's without even considering the peace of mind and quality improvement from what is essentially a new store," he explained.

"Good stores result in better quality potatoes and better premiums which will help towards

future storage investments, and somehow we need to make a system with a common theme, and one that works properly?"

## Store upgrade case study:

Long-term store for processing, 8°C, 2,500t. This is a high specification that includes low TD refrigeration, in-line humidity, inverters, ambient air mixing and independent 180t bays.

## Cost of upgrade: £84/t (£8.40/t over 10 years)

Loss of 150t of storage capacity as existing overloaded

## Savings:

One less CIPC application	£1.00/t
Energy savings	£3.25/t
Weight loss reduced	£5.40/t
Wastage reduced	£6.50/t
Box wastage	£2.75/t
Total	£18.90/t

## New CIPC label

Growers using CIPC products in potato stores will have to adhere to new statutory conditions for this season as part of the ongoing CIPC stewardship campaign designed to reduce residue levels found in stored crops.



SBCSR's Adrian Briddon.

For 2014, new labels for all CIPC products will limit the total dose to 30g/t (fresh) and 58g/t (processing – including fish and chip shop use). This is a reduction from 36g/t and 63.75g/t respectively since 2013.

The maximum individual dose allowed will be 18g/t while the minimum harvest interval date has been changed from 2 to 14 days.

As a continuation from last year, for cold stores with a holding temperature of 5°C or below, only one application is recommended, and this must be made before the temperature in store is reduced below 7°C. Air must also be

recirculated for at least six hours without cooling, prior to application.

Speaking at the event, SBCSR's Adrian Briddon said that the advice to growers with cold stores is to get the treatment on early, within three weeks after harvest. "We want the application to take place early to extend the interval between application and sale," he explained. "In cold stores the CIPC evaporation is much reduced and so the earlier it can be applied the better, even in the absence of signs of the crop breaking dormancy.

"Efficacy is also better from early applications," he added.

Adrian highlighted the fact that the latest statutory changes in the use of CIPC were part of a phased change in the way it will be used in the UK; the total dose applied will be reduced to 36g/t by 2017, bringing it in line with current European limits.

In addition, recirculation systems with fans will be statutory in bulk stores by that date, as will overhead throw-type modifications in box stores to improve air distribution, said Adrian.

## A uniform environment

SBCSR's Adrian Cunningham said that creating a uniform environment within potato stores was fundamental to getting the best out of them, from cost, quality and CIPC residues perspectives.

Starting with bulk stores, Adrian pointed out that when air is blown down ducts, the aim is for even dissipation and velocity if it is to get to the right places in the store. "Air follows the least resistant route unless we do something about it like regulating the ducts beneath the crop. 'Guarded slot' floors offer the most uniform option for airflow, and CIPC distribution when used with an inverter, in bulk storage," he pointed out, "while tapered ducts are

continued over...



Adrian Cunningham.