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RETROFIT SPRAYER AUTO SHUT OFF IMPROVES PERFORMANCE

Vegetable growers increasingly expect more out of their spraying equipment in terms of seasonal output and life expectancy, which has resulted in manufacturers focus on build quality and technological advancement improvements.

This might well be the case for newer models rolling off the production line but what about growers who have purchased later models that do not have the most up to date computer wizardry and GPS facilities?

Mechanical and electrical upgrades coincide with chemical use, which has increasingly become under the spotlight particularly with environmental issues and costs. Constantly under review are chemical application rates, which are critical to profitable vegetable production because they are sensitive to over and under spraying.

Over spraying can seriously damage a crop and even kill it while under spraying can result in disease infestations and competition for light and nutrients, ultimately compromising both yield and quality.

A strategic management decision by Chafer Machinery to offer existing customers a retrofit service on its older machines for the latest Auto Shut off and boom levelling facilities is having a significant impact for growers who bought equipment without these and other facilities as standard.

Lincolnshire vegetable grower Patrick Chennells has retrofitted the Auto Shut off facility costing about £3,000 to his 4000l 27m Multidrive demount Chafer sprayer, which is in its fourth season on the family run 5000 acre operation, and replaces a self-propelled GEM sprayer.

G H Chennells Farms Ltd based at Clay Farm near North Scarle grows combinable crops, and roots including 500 acres of bulb onions, 450 acres of carrots and parsnips and 600 acres of potatoes plus a recent addition in beetroot, grown mostly on contract for major processing outlets.

"We are led by our customers which is why we always aim to produce a high quality product delivered to order," says Mr Chennells. "This puts tremendous pressure on us because machines are expected to work



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longer and are pushed harder and this means there is little margin for error. Our operators also have to meet this pressure demand and so it is essential that they have the best working environment.

"We spray at speeds up to 15kph so the operator has to make quick decisions especially with judging when to switch the nozzles on an off. We also drill all our headlands so it is essential not to over spray, particularly the more sensitive crops. Onions, parsnips and carrots are especially sensitive to over spraying. Onions can be sprayed up to 15 times a season so we can't afford to make a mistake."

A delay function on the Auto Shut off function means that parameters can be set according to what is being sprayed. For fungicides there must be total crop coverage because left unchecked disease can decimate a crop, either in the field or in store. Equally, overspraying fungicides can lead to residue issues while overspraying herbicides puts yield at risk.

"Onions are particularly susceptible to downy mildew and botrytis which can cause total crop loss if left uncontrolled. Both these diseases can take hold of a crop in less than 10 days."

He adds that you can have all the latest gadgetry but without skilled operators crops are still at considerable risk.

"Auto shut off means the operator can concentrate on driving the machine in the direction of travel rather than having to look behind all the time to make sure the nozzles are turned off and on at the appropriate times. In theory GPS should mean we can guarantee spraying quality.

"GPS wasn't really around when we first needed it as a facility on the sprayer and we were just in front of the technology when it became available. We started looking at all the available retrofit systems including Chafer, and with the company's experience and location in relation to our business it made sense to go with them. It was easy to fit but it was more about getting the operator up to speed.

"We have found that when using GPS a field needs to be finished the same day. For some reason – and it seems to be a problem with all satellite systems – if you wait until the next day to finish a field the satellite positioning moves very slightly. This is relatively easy to overcome once the operator is aware of it."



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Mr Chennells' chemical budget is about £290,000/annum so installing GPS Auto Shut off for £3000 is a negligible cost and, whilst difficult to quantify, the savings it has made in its first year it will quickly pay for itself.

The farming business also runs a second sprayer which is tractor mounted with a 3000l tank. He has been so impressed with the Chafer Auto shut off that he is having a similar system fitted. Combined the two sprayers cover about 40,000ac/annum.

There has been one complication with the Auto Shut off that relates to a frequency interference issue between it and the two-way radio system on the farm. Replacing the radio handset in the sprayer cab sorted that out.

"The Chafer Demount has the lion's share of spraying so in about three seasons it has already covered 75,000 acres. It is an excellent machine and our intention is to keep it for as long as it has the reliability we expect. We rely on the sprayer being in good working order because we cannot afford any downtime due to the pressure on spray days and operator availability.

"We do the best we can with the land we have which is more suited to processing vegetables. But, with in excess of 15,000 tonnes of storage, quality is always on the top of our agenda. Growing processing vegetables is no longer considered a 'second rate' product, it's just a different market with just as much emphasis on quality as for packing. We are in an increasingly high cost market that has become specialist."

Mr Chennells used to grow primarily packing carrots but demand has dropped off in recent years so it suits his system and soil type to concentrate on growing processing produce.

"There is a niche for processed vegetables grown by dedicated suppliers. We grow fewer carrots now than in the past, which have been replaced with onions and beetroot."



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Growing high quality processing vegetables requires attention to detail and a professional attitude towards growing them, explains Mr Chennells.

"Our suppliers expect the best and we aim to deliver so every aspect of growing the crop is scrutinised. The margin for error is very small and every input is critical," Mr Chennells concludes.

