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CASE IH MEDIA RELEASE

FASTER SPRAYING WITH HIGHER ACCURACY

(March 2011) – With a good soil moisture profile for this year's seeding, an immediate consideration for many growers is how to protect their fledgling crops from weeds, pests and disease – and how to do it cost effectively. Managing spray drift, ensuring accuracy and getting the crops sprayed as fast as possible are key ways to do that, according to Case IH Brand Manager, Patriot Sprayer, Ross Johansson.

"Crop protection chemicals, fertiliser, fuel and, of course, the farmer's time all have a cost associated with them," said Ross. "It's crucial that farmers be able to use these inputs efficiently. If spraying takes too long or if chemicals are wasted due to spray drift or operator error, then the farmer simply isn't getting enough bang for his spraying buck."

Ross says Case IH's exclusive AIM Command system – unique to the Case IH range of Patriot self-propelled sprayers – can save farmers time and money by delivering precise and efficient chemical application in a range of field conditions and at speeds of up to 40km per hour. It allows operators to specify droplet size and pressure from the cab, regardless of water rate or ground speed.

“The AIM Command system uses pulse width modulation (PWM) and computer technology to manage flow and droplet size specific to various chemicals,” said Ross. “It lets you toggle between two preset rates that are independent of field speed. In a nutshell, that means better chemical performance and utilisation, consistent application patterns and no pattern loss in turns, corners and on hills. Importantly, it reduces the chance of operator error and it lets you get the job done faster and more accurately.”

How does it work?

With AIM Command, spraying is done with a constant rate within as much as an 8:1 speed range through a single nozzle. The application pressure can be selected and toggled between two preset values without varying that speed range. This is important because the constant application pressure means a constant droplet size, which results in better coverage and better drift management.

The AIM Command system uses computer technology to automatically and instantly change tip orifice sizes on the go, which solves the issues found in conventional spray technology. A standard tip is sized for the maximum flow, which is based on maximum field speed and application rate required for a particular chemical.

The AIM Command computer uses PWM valves that open and close 10 times per second to control the flow at each nozzle section. This PWM control varies the duty cycle to simulate a variable tip orifice that maintains the operator-set pressure and speed. As the sprayer’s speed changes, the system changes the flow to maintain the correct rate. In concert, the duty cycle changes to simulate a smaller or larger tip accordingly.

“When you have to slow down to get around obstacles in the field or when making turns, a conventional sprayer will over-apply the chemical, which can potentially damage crops and wastes valuable chemicals,” said Ross. “Using conventional systems can also create more potential for spray drift when you travel faster, because the boom pressure increases and droplet size decreases. AIM Command overcomes these problems by maintaining that constant pressure independent of application rate or ground speed.”

The Patriot sprayer’s new AutoBoom automatic boom height control function also reduces the potential for spray drift by continually monitoring boom height and automatically adjusting the boom back to the programmed position. The ultrasonic sensor works in addition to up to five other sensors mounted on the boom to measure and adjust the boom height relative to

the ground. This maintains spray pattern and droplet size as well as avoiding costly damage to booms from hitting the ground.

The optional AccuBoom automatic boom section control allows you to automatically switch off boom sections when the sprayer enters an area that has already been covered, then turn those sections on again when the sprayer leaves that area.

“AccuBoom provides chemical savings, of course, but it also reduces operator stress by eliminating the worry of forgetting to turn boom sections off and back on when passing through areas that have already been sprayed,” said Ross.

“By simplifying the operation of the machine and its functions, we can allow the operator to concentrate on the spraying job rather than steering. It also minimises the risk of operator error and wastage of inputs due to factors like spray drift.”

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