

Choosing the right guidance system

Central Queensland grain growers are passing on the benefits of their early adoption of GPS guidance systems to growers across Queensland and NSW.

Emerald-based Queensland Department of Primary Industries and Fisheries (QDPI&F) extension officer Brendan Lynch has captured grower experiences and identified key issues to consider when purchasing guidance systems.

Brendan documented grower experiences as part of a grower tour of several farms in CQ's Dawson and Callide valleys as part of the Grains Research and Development Corporation (GRDC)-supported CQ Sustainable Farming Systems project.

Brendan said tour participants had the opportunity to learn from the experience of local growers currently using a GPS guidance system and get a practical insight into the advantages and disadvantages of their particular system.

"The tour visited growers with different brands of auto-steer guidance systems with accuracies ranging from two centimeters to 25 cm.

"They were able to discuss GPS guidance without the confusing sales pitch and technical jargon often associated with the guidance industry."

Wayne Chapman of CTF Solutions was on hand to explain and elaborate on the technical aspects of guidance.

KNOW WHAT YOU WANT TO DO

Brendan said growers should carefully identify their needs before purchasing a system to ensure maximum performance and efficiency.

"If inter-row cultivating, planting adjacent to standing stubble or shield or band spraying, growers may find a system with two cm accuracy is suitable," Brendan said. "But if the objective is to minimise spray overlap, a 10 cm or 25 cm system may do the job."

He said the auto steer system should be compatible with existing machinery and repeatability of the system was critical for growers seeking highly accurate, precision guidance.

"Repeatability is the long term accuracy that allows you to come back in two hours, two days or two years to the same location.

"Some guidance dealers will quote 'pass

to pass' accuracy which can be confusing for growers as it only guarantees accuracy if a following pass is performed within 15 minutes."

Brendan said dual frequency guidance systems reduced satellite acquisition times during start-up and reacquisition following satellite drop out.

"A good base station setup and location

is vital for high precision systems to operate to their full potential."

Good customer service was vital to address teething problems during the setup phase and test driving before purchase was advisable, he said.

Brendan Lynch is currently overseas but for further information contact Wayne Chapman, CTF Solutions on (07) 4627 3434. ■



CROP DOCTOR With Peter Reading NORTH

HELIOTHIS FACES ITS NATURAL ENEMIES

A small native wasp carrying a disease lethal to the major crop pest heliothis is a key weapon in the Grains Research and Development Corporation's (GRDC) integrated pest management (IPM) strategy.

GRDC-supported research by the Queensland Department of Primary Industries and Fisheries (QDPI&F) shows both species of heliothis are susceptible – *Helicoverpa punctigera* or native budworm and *H. armigera*, known as the cotton bollworm or corn earworm.

QDPI&F entomologist David Murray said the wasp, *Microplitis demolitor*, was one of the key beneficial insect pests that attack heliothis caterpillars in Australia.

"Microplitis wasps lay their eggs in small heliothis caterpillars," David said.

"Female wasps also play an important role in spreading ascovirus, a lethal disease of heliothis caterpillars."

Corn earworm on grain sorghum is making its presence felt and many crops are being sprayed with heliothis nucleopolyhedrovirus (NPV) to control above-threshold infestations of caterpillars.

The current high value of grain sorghum (more than \$250 per tonne) means that it is economic to control caterpillars at lower numbers than growers may have sprayed previously when grain value was lower.

Low caterpillar numbers is a perfect situation for *Microplitis* to chip in a helping hand. It is not uncommon to find 30–40 per cent of small caterpillars on grain sorghum parasitised by *Microplitis*.

In many cases, this level of parasitism may be sufficient to sway a decision to not spray.

"NPV only kills heliothis species whereas ascovirus infects other moth caterpillars in the Noctuid family including armyworm.

"Ascoviruses are not related to the commercially available NPVs which belong to a separate virus family."

He said a caterpillar infected with NPV will turn black, liquify and splatter but a caterpillar infected with ascovirus is much harder to detect as being infected.

Understanding the life cycle of the wasp is the key to understanding its role in heliothis control and minimising the effect of insecticides will enhance its impact.

"Broad spectrum insecticides will kill *Microplitis* and even a biological insecticide like NPV and Bt call kill the larvae if the host caterpillar is killed before the parasitoid can complete its development."

The QDPI&F entomology team is a leader in the science of managing insect pests and their natural enemies in broadacre farming systems and its research is applied across the northern grains region from Emerald, Queensland to Dubbo, NSW.

For more information, visit <http://www2.dpi.qld.gov.au/fieldcrops/17576.html>

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