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## Early decision making needed for frost management

Grain growers at the Hart Field-Site Group's Getting the Crop in seminar in Clare recently were given an insight into the complexities of frost and some strategies for coping with its unknowns.

Frost had a major impact in 2016, with up to \$200 million loss in grain in South Australia as a result.

Agrilink Agricultural Consulting consultant Mick Faulkner of Penwortham told growers that while there were no simple, one-for-all, guidelines he suggested temperature loggers immediately above the canopy level, attached to the southern side of non-conductive PVC, would provide vital data for early decision making.

"We need to be quick on damage assessment," he said.

"We need to be able to quantify how much frost damage has occurred, the area impacted, make loss calculations and look at loss mitigation options such as writing it off, cutting for hay, fencing it off and using it for grazing, as well as future planning."

Mr Faulkner said tagging plants - even as simply as tying a ribbon around them - to monitor the same plants for growth was an effective monitoring tool.

"Developing grain should be growing about 1 millimetre every two days after flowering, and if it's not then you need to start looking hard at the plants," he said.

Variety and paddock selection in frost prone areas was also vital.

"Is the risk of growing crops so high that livestock options are preferred? What will spreading the time of sowing, crop management and stubble management do to the risk? Stubble increases frost damage by lowering temperatures so "burn, cut, bury or take the risk" with stubble is a decision for those with paddocks that could experience frost," Mr Faulkner said

"I know there are many that always thought frost was just a problem at flowering time.

"But we've seen it occur during stem elongation, at the boot stage which is well before flowering, through all stages of flowering, mid and late in grain fill, and even with full grain just a couple of weeks away from maturity.

"Cold air descends because it is more dense, so draining that cold air out of paddocks can work, and if it means knocking down wild oats and other weeds along the edge of the paddock then I suggest you do so."

*Photos next page.*

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Photos below:

1. Frost at flowering showing anther, stigma and ovary damage
2. Whole head frosted while in the boot, well before flowering
3. Developing grains in a head having been frosted

