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## MEDIA RELEASE

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### Soil Carbon's Future in Fortifying Farms NSW Industry and Investment (15 July 2010)

#### NSW DPI

Soil organic carbon (SOC) will play a crucial role in the future of mixed farming systems according to research to be presented at the NSW Grassland Society annual conference in Dubbo, July 28 and 29.

Industry & Research (I&I) NSW principal research scientist, Yin Chan, said farming systems which can maintain or increase SOC levels will hold the key to adapting to the environment predicted by climate change research.

"Pasture management will play an important role in this challenge – SOC increases of up to 0.5 tonnes per hectare annually have been observed under improved pasture where a leguminous pasture was fertilized with phosphorus." Dr Chan said.

"Graziers can combine improved, fertilized pasture with grazing management, pasture cropping and other management practices to increase SOC levels.

Replacement of shallow-rooted annual pastures with deep-rooted perennials pasture may also improve soil carbon cycling and distribution in the soil profile."

And higher levels of SOC can lift crop yields which has important implications for future food security. In the cropping phase conservation farming techniques including no-till technology can increase, or at the least, maintain SOC.

Of equal importance according to Dr Chan, attributes of healthier soils – more stable soil structure, higher moisture infiltration rates and more abundant earthworm presence and biological activity – were all found in soil with higher levels of SOC.

"SOC plays a role in improving water use efficiency via its effect on soil structure and the associated soil physical properties." he said.

"Increased water hold capacity, higher infiltration rates and nitrogen availability which result from improved SOC levels make farming systems more resilient to climate change.

"Soil under well-managed rotational systems should also be more resistant to the erosion hazards caused by extreme drought and rainfall events."

Dr Chan will present the SOC findings in a key note paper at this year's NSW Grassland Society annual conference.

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