



CLIMA Media Release

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IRAN, EGYPT, PAKISTAN AND CHINA FIGHTING IN WA

Agricultural scientists from Iran, Egypt, Pakistan and China, along with their Australian allies, are fighting the negative effects of disease, drought, salinity, waterlogging and temperature on legume crops in WA and their countries.

WA and Iranian researchers, for example, are pooling resources to find drought tolerant chickpea genotypes to benefit drought affected Iranian and Australian farming systems.

Associate Professor Nasser Majnoun Hosseini, of the University of Tehran, is in WA for six months to help develop agronomic and genetic strategies to increase yields during drought.

Speaking at the Centre for Legumes in Mediterranean Agriculture (CLIMA) at the University of WA, he explained that Iran's farming systems have similarities to WA.

"Iran has arid regions, with low annual rainfall, where chickpea is grown although current varieties give poor emergence and establishment under limited moisture conditions.

"There is a need for chickpea varieties that can emerge early, with limited soil moisture and then withstand cold and dry winter conditions, hence we are screening for suitable genotypes under simulated conditions in the glasshouse at CSIRO," Professor Hosseini said.

Three other scientists, from Egypt, Pakistan and China, are collaborating with local scientists at UWA, CSIRO and the Department of Agriculture and Food (DAFWA).

Visiting WA on an Australian Government Endeavour Fellowship, Dr Magdi Abdelhamid, of the National Research Centre, Cairo, is working with CLIMA to improve water use efficiency in faba beans and studying how they fix nitrogen when moisture stressed.

"Drought is extremely stressful for crops and understanding how they grow at that time will allow us to define drought resistant traits and ultimately breed cultivars better able to withstand stress and produce respectable yields," Dr Abdelhamid said.

At the opposite end of the rainfall spectrum, Asia Gulnaz of the Nuclear Institute for Agriculture and Biology (NIAB), Pakistan Atomic Energy Commission, is exploring the interactions between waterlogging and salinity and their effects on legumes.

Funded by the International Atomic Energy Agency (IAEA), her study, using radio-isotope techniques, will help legume breeders develop and select salt and waterlogging tolerant cultivars.

“Salinity and transient waterlogging are important production constraints in Pakistan and Australia,” she said.

WA will also benefit from the genomic researching skills of Dr Ruiming Lin of the Chinese Academy of Agricultural Science, Beijing.

He is collaborating with UWA and DAFWA to identify a marker in lupin to create an anthracnose resistant plant using the Microsatellite anchored Fragment Length Polymorphisms (MFLP) technique.

Developed by CLIMA, MFLP shows DNA patterns and produces genetic markers.

Dr Lin will use the MFLP technique he learns in WA to develop a yellow rust resistant wheat variety when he returns to China.

CLIMA Director, Professor Kadambot Siddique described international collaboration as a very important CLIMA activity, which enhances research capacity in WA.

“Simultaneously hosting such high achieving scientists from four countries reflects CLIMA’s standing in the global legume science community and augers well for the future of WA legume growers, the ultimate beneficiaries of such collaboration.”

***Caption:** Enjoying the sunshine at CLIMA are Professor Kadambot Siddique of CLIMA, Dr Magdi Abdelhamid of Egypt, Adjunct Professor Neil Turner of UWA, Asia Gulnaz of Pakistan, Professor Craig Atkins of UWA, Dr Ruiming Lin of China, Dr Jens Berger of CSIRO, Dr H. Yang of DAFWA and Professor Nasser Majnoun Hosseini of Iran.*

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