

Project Title: SAGIT Plant Breeding Scholarship

UA 1/04 Final Report

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Executive Summary

This project aimed to train a cereal breeder. Using the expertise and network of the Molecular Plant Breeding CRC. The trainee, Stephen Talbot, undertook a PhD research project on the introgression of genetic material from synthetic hexaploids into Aust bread wheats. During his research and training, he benefited from supervision and interaction with scientists from participant organisations in the CRC. Prior to this project, DPI-Vic researchers backcrossed 44 synthetic hexaploid wheat to Aust cultivars Yitpi and Annuello, the results of which were used in this project. Molecular evaluation of the primary synthetics and some of their putative parents provided information on genetic similarities and differences revealing apparent inaccuracies in the recorded pedigree information for some synthetics. Molecular evaluation of synthetic derivatives confirmed that genetic material can be readily introgressed from synthetics into bread wheat. Agronomic evaluation of synthetic derivatives identified materials that may be useful sources in breeding for grain yield, grain size and/or rust resistance.