

FINAL REPORT

CSP150

Evaluation of potential Linola cultivars for southern Australia.

PROJECT DETAILS

PROJECT CODE: CSP150

PROJECT TITLE: EVALUATION OF POTENTIAL LINOLA CULTIVARS FOR SOUTHERN AUSTRALIA.

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END DATE: 30.06.1997

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Summary

LINOLA™ is a new oilseed crop developed by CSIRO Division of Plant Industry. It was derived from linseed by mutation breeding to eliminate the high content of linolenic acid that previously made linseed oil too unstable to be used in food products. Linola oil has a very high content (65-75%) of the desirable polyunsaturate linoleic acid, making it equivalent to safflower oil and high-linoleic sunflower oil, and suitable for use in food products currently formulated with these oils. Extensive pilot-scale and commercial scale evaluations of Linola seed crushing, oil refining and product formulation have demonstrated that Linola can be readily integrated into existing oilseed processing systems.

Australia imports about 30% of its requirements for polyunsaturated oils at a cost of \$26 M annually. Linola offers the potential to replace a substantial proportion of these imports because it can be grown in southern Australia close to the domestic end-use markets, is harvested at a time of year (Nov-Mar) when locally produced sunflower is in short supply, and has a polyunsaturate level that is higher than can be reliably produced in sunflower.

The CSIRO Linola breeding program has resulted in the release of two initial varieties, Wallaga and Eyre, registered under the Australian Plant Variety Rights scheme. Following competitive bids CSIRO appointed Seedex Pty Ltd as the exclusive licensee for production and marketing of Linola within Australia. Commercial production commenced in 1992 with the sowing of about 1700 hectares in various locations in NSW, Victoria, South Australia and Tasmania.

In order to support the establishment of a viable and expanding Linola industry, varietal performance needs to be improved beyond that achievable with Wallaga and Eyre, to make the crop more competitive with alternative enterprises. There is

considerable potential to achieve this improvement because there has previously been very little breeding of linseed for the Australian environment. Since 1988, the CSIRO breeding program has concentrated on diversifying the germplasm base by incorporating recently-bred overseas linseed varieties as parents. As a result, a range of advanced Linola lines based on these introductions are being developed on an on-going basis. In initial single location testing during 1991 in 1992, the first set of these lines demonstrated potential for increased yields, higher oil contents, and greater resistance to both lodging and flax wilt.

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