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Lincoln College, Canterbury, New Zealand.



The Ethanol Project

putting the pieces together

For the past six months the Institute has been busy building equipment for a beet-to-ethanol processing plant at Lincoln College.

The contract with the Liquid Fuels Trust Board involves study of sugar extraction from the beet and the utilization and disposal of by-products and waste. Fermentation and distillation equipment is being provided to link these two sets of pilot-scale study equipment.

The most "prominent" feature of the new plant was recently installed. It is the upper section of a distillation column which projects six metres above the roof.

Inside the building and in the Institute's workshops the various components of the plant are taking shape and being put into position.

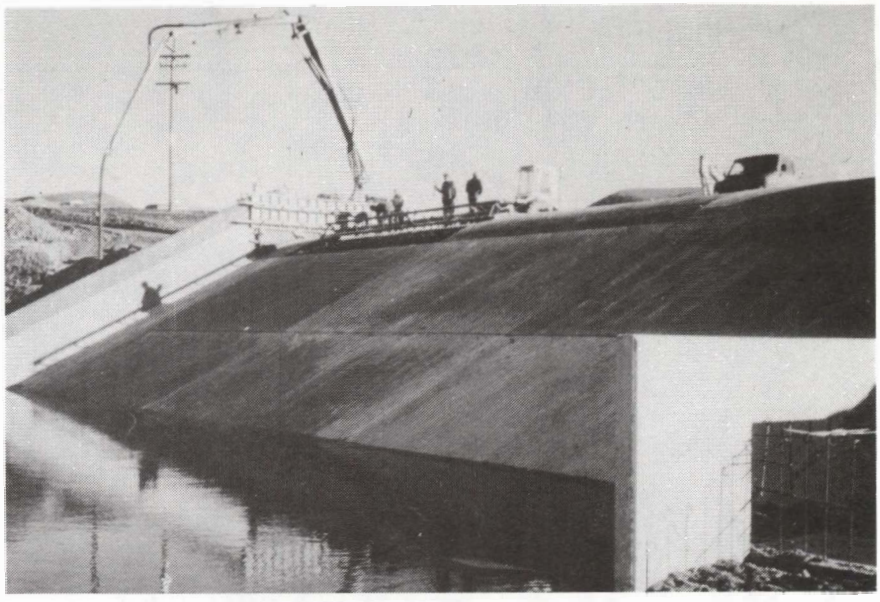
The Institute has previously worked on the agronomy and mechanization of beet growing and is currently working on another Liquid Fuels Trust Board contract on beet harvesting and storage. The overall programme will continue to provide better-based information on this particular biomass fuel option in the New Zealand context than has previously been available.

IRRIGATION

Work is continuing on two major projects in the South Island. The Hakataramea scheme in North Otago is still under study. Flow measurement stations have been set up in the tributary streams. Rainfall and river flow data have been stored on the Lincoln computer, and hydrology and irrigation demand studies are continuing.

There are 40 farms in the valley, and up to 10,000 hectares may be suitable for irrigation.

Work on the Glenmark scheme is well advanced. The photo on the right shows the Weka Stream diversion dam which is almost complete.





LEFT. Members of the Institute's planning team inspect progress at Glenmark.

From left: Peter Carran and Neil Borrie study the water and surrounding terrain, while Project Leader Terry Heiler relates a fishing story.

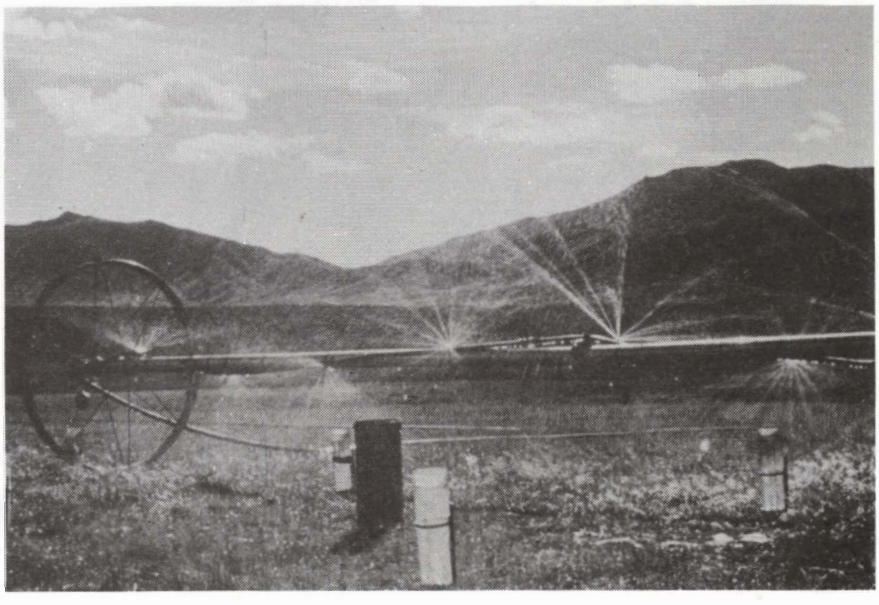
650,000 cubic metres of earth are being moved in the course of construction and the irrigation area will total 1300 ha. when the scheme is completed.

Soil Infiltration Studies

Some spray irrigation systems apply water at a faster rate than the soil can absorb. This can cause poor distribution and waste of water through runoff. There is not much information available on water infiltration, and a joint project is being done to study this.

The aim is to develop a simple means of determining the hydraulic properties of different soil types so as to be able to recommend suitable irrigation methods and application rates.

RIGHT: Field trials in North Otago.



EXTENSION ACTIVITIES

TELEVISION

A star is born

"So this is showbiz" muses Mike Robinson during the filming of a television programme on fencing at Lincoln.

A second programme which was also filmed recently at Lincoln dealt with the work that the Institute is doing in testing fertilizer spreading machines.



NEW ZEALAND AGRICULTURAL FIELDAYS



65,000 people went to see New Zealand's major farm equipment exhibition at Hamilton.

The Fieldays offer an excellent opportunity to demonstrate the work of the Institute, and for staff to see new advances in equipment and techniques.



Direct drilling was the sole topic in the Institute's display at the 1981 National Agricultural Fieldays.

Experimental drilling equipment was on show, as well as examples of direct drilling machines commercially available.

The centrepiece of the exhibit was the Roto-Drill which won a Prototype Award.

RECENT PUBLICATIONS

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MARTIN, G.A. JANSON, C.G. (MAF) EBERT, A.J. (MAF) EVANS, H.R. (MAF) — *Direct Drilling. Equipment, Management and Costs.* Aglink FPP 513. May 1981.

PAINTER, D.J. — *A Simple Deflection Model for Agricultural Tyres.* Journal of Agricultural Engineering Research 26 (1),9-20, 1981.

WATSON, E.M. FITCHETT, S.G. — *Don't be Blase about Safety Frames.* N.Z. Farmer. 9 April 1981. Vol. 102, No. 7.

YOUNG, R.W. — *Alternative Fuels - An Introduction.* Aglink FPP 424, 1st Revision (in press).

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