Comparative yields of turnips, sugar and fodder beet on the southern tablelands of New South Wales

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Promotion of sugar and fodder beet as potential sources of fuel and/or fodder has aroused farmer interest. During 1979-81 a series of seven irrigation trials was sown in the Tablelands areas of N.S.W. to assess agronomic and economic potential. Dryland crops all failed, so results are from irrigated areas only.

Results and Discussion

There were no significant variety differences in any trial for sugar and alcohol yields. Pooled results were:

	Green roots tonnes/ha		Sugar tonnes/ha		Expected Alcohol litres/ha	
	Average	Range	Average	Range	Average	Range
Sugar Beet	44.4	21-63	7.42	4-11.4	2649	1470-4041
Fodder Beet	59.0	41-73	5.58	3- 8.2	2245	1490-2720

These yields compare favourably with the long term-average in Great Britain (1) but are 20-40% below those obtained in Tasmania and New Zealand (2).

Turnips equalled or significantly outyielded both sugar and fodder beet on all occasions. Average total forage yields were:-

Crop	Dry Matter Yield (tonnes/ha)	
	Leaves	Total
Turnips	8.54	21.9
Sugar Beet	4.30	12.6
Fodder Beet	3.72	11.5

Beets are expensive to grow and demand constant management, including attention to seedbed preparation, sowing, weed control and irrigation. Estimated costs per hectare are as follows:

	$/ha
Seed and Fertilizer* (including lime 2.5 tonnes/ha)	200
Cultivation, sowing*	100
Insect and weed control* (band spray and prepost emergence)	166
Irrigation @ 50mm/month for 6 months	240
Harvesting and transport to shed**	156
	$880

*Costed at contract rates **Based on Tasmanian estimates

Soil type (particularly pH and drainage), weed control and irrigation requirements appear to be the costly and critical inputs for beet production. We doubt some of the optimistic values placed on the surplus leaves (3). Leaf yield progressively dropped after maturity and would be negligible if the crop is to be left in the paddock until late winter to keep processing plants operational. In two trials after heavy summer rain, significant rotting occurred within six weeks (up to 30%) when tubers were nearly mature.

1. Chilean Nitrate Agricultural Service, Sheet No. 144 Feb. 1981

2. Tasmanian Journal of Agriculture - May 1979

3. R. Mcann, Fuel Ethanol Research and Development Workshop, Canberra 1980.