

## ARE ORGANICALLY-GROWN VEGETABLES NUTRITIONALLY BETTER?

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Consumer interest in organically-produced foods has increased in recent years. In 1988, the Australian market for organically-grown produce was estimated to be \$6.5 million. By 1990, the market had expanded to approximately \$45 million (Challacombe 1991). A survey of the scientific literature demonstrated that little information existed on the nutritional content of organically-grown produce, particularly as it compared to conventionally-grown food.

Therefore two small studies were conducted by the Department of Health, Housing and Community Services as part of the nutrient analysis program to determine the effect of organic farming methods on the nutrient content of four vegetables, potato and broccoli (1991), cauliflower and tomato (1992).

Three farms employing different farming methods were selected for the study. Produce was classified as:

- organically grown — National Association of Sustainable Agriculture (NASAA) certified level A, or
- grown in environs undergoing conversion to organic status — NASAA level B, or
- grown by conventional farming methods.

For potato and broccoli, 21 samples of each vegetable were harvested in March 1991 for analysis. On each farm, seven 1 Kg samples were collected from different plots. After transport to the laboratory, the vegetables were washed and 21 composite samples prepared. Raw, unpeeled potatoes were analysed for moisture, total nitrogen, sodium, potassium, calcium, magnesium, iron, copper, zinc, manganese, phosphorus and vitamin C. Broccoli was trimmed and analysed raw for moisture,  $\alpha$ -carotene,  $\beta$ -carotene, cryptoxanthin and vitamin C. In the 1992 series, cauliflower and tomato were sampled and prepared according to the same protocol as before and analysed for moisture, total nitrogen, potassium, phosphorus and vitamin C.

For each vegetable, the analysed nutrients were compared across the different farming methods using one way analysis of variance. Detailed results of the analyses will be presented in the full paper.

Although statistical differences across the methods were apparent for some nutrients, the results indicated that, for the vegetables and nutrients analysed, organically-grown produce was not nutritionally superior to conventionally-grown produce.

CHALLACOMBE, M. (1991). Foodweek 1194 (No.): 8.