Recent agronomic studies on ‘Jersey Giant’, ‘JWC1’ and ‘Pacific 2000’ asparagus in New Zealand

Introduction

Jersey Giant, bred in the 1970’s and JWC1, bred by J Wattie Canneries, in the 1980’s are the main varieties of asparagus in the North Island. Pacific 2000, bred by Aspara Pacific in the 1990’s, is a newer hybrid with better spear quality and crop survival than Jersey Giant and JWC1. Pacific 2000 is the main cultivar now grown in the South Island. The results of cultivar evaluation and plant density trials conducted on grower properties with these three cultivars in the past 15 years in Canterbury, South West North Island, Hawkes Bay and Waikato are described here.

Materials and Methods

(a) Cultivar trials

Trials of Jersey Giant, JWC1 and Pacific 2000 were established in the early and mid 1990’s in Canterbury and in 1999 in Hawkes Bay, South West North Island and Canterbury. They were harvested for 3 to 7 seasons.

The Canterbury trials were planted at a density of 22,222 plants/ha and at 20,202 plants/ha in the two other regions.

Only saleable yield (spears 23 cm long) results are given here.

Plant survival in all trials was determined during the summer following planting of the trials and in most summers after each harvest season.

(b) Plant density trials

Plant density trials were established in Hawkes Bay and Waikato. Plant populations ranged from 25,000 to 55,000 plants/ha. The trials were harvested for 3 seasons.

Results

Recommended Varieties

Pacific 2000 had the highest saleable yield in the trials (figure 1). Pacific 2000 averaged 54% higher saleable yield than Jersey Giant and 29% higher than JWC1 in the variety trials and 48% higher than Jersey Giant and 12% higher than JWC1 in the density trial in the Waikato. The yield increase got larger as the trials aged probably because Pacific 2000 had the best plant survival of all varieties.

Pacific 2000 also had the highest plant survival of the three varieties at the end of the trial period. The results from these trials suggest that Pacific 2000 is likely to be a good cultivar for new plantings in all asparagus growing regions of New Zealand.

What is the best Plant Density?

The optimum density for Jersey Giant was between 43,000 and 47,000 plants per ha (figure 2). For JWC1 the optimum density was between 31,000 and 42,000 plants per ha. For Pacific 2000 the optimum density was higher still.

Figure 1: Saleable yield (t/ha) of Jersey Giant (JG), JWC1 and Pacific 2000 (P 2000) at four sites in Canterbury (C1, C2, C3, C4), South west North Island (SWNI) and Hawkes Bay (HB).

Figure 2: Saleable yield (t/ha) from five populations of Jersey Giant (JG), JWC1 and Pacific 2000 (P 2000) in Hawkes Bay and Waikato.

Figure 3: Population (M/ha) for Jersey Giant (JG), JWC1 and Pacific 2000 (P 2000) in Hawkes Bay and Waikato.