

SUMMARY - Fraser Valley Cultivar Trials

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In 2003, 11 cultivars of tall fescue, 17 cultivars of orchardgrass and 10 cultivars of perennial ryegrass were planted in locations in Agassiz, Chilliwack and Sumas (Abbotsford) B.C.

In 2004, the Alpine cultivar of orchardgrass in the Chilliwack and Sumas sites was considerably winterkilled, and two cultivars of perennial ryegrass, Aries and PSGG-9-04 at the Sumas site demonstrated a susceptibility to winter kill. No doubt the extremely cold winter experienced in the Fraser Valley contributed to the winter kill. However, low temperatures are not the only cause of winter kill; wet soils, a high water table, lack of snow cover, and desiccation also contribute to grass injury over winter and these factors may explain why the same extent of winterkill was not observed across all sites. Although the grass survived the hot, dry summer of 2004, the conditions appeared to reduce yields for perennial ryegrass and to a certain extent, tall fescue. Tall fescue was reseeded in Chilliwack at the Rutley farm and established well.

The winter of 2004/2005 saw flooding and icing of fields throughout the Fraser Valley. Although the amount of precipitation was not abnormally high, rain falling on frozen ground was not able to drain and later froze as temperatures dropped. After the cold snap, there was an early spring in 2005 and grass began to grow in February. No winterkill was observed, and plots that had experienced winterkill prior to the 2004 harvests had recovered sufficiently to obtain initial harvests. Plots that had suffered from winterkill in 2004 had a tendency to be exploited by volunteer grasses throughout the year. By the third cut, Alpine orchardgrass plots in Chilliwack and PSGG-9-04 perennial ryegrass plots in Sumas had to be discarded. The Rutley tall fescue plots were used instead of the Hylkema tall fescue plots (which had a weak establishment) to record tall fescue data from Chilliwack. Although there was moisture in spring and early summer, the late summer and early fall was dry. Perennial ryegrass suffered especially and only three harvests were conducted at the Chilliwack and Sumas locations due to the stunted growth of the perennial ryegrass in summer and early fall. PSGG-9-04 and TetraLyte II appeared to be particularly affected at the Chilliwack and Sumas sites from the hot spell. Tall fescue and orchardgrass also suffered somewhat from the dry spell and harvests that normally could be expected for late August or September were postponed until later in the year. Therefore a maximum of only four cuts were taken.

Methods:

Plot maintenance:

Fertilizer was applied to plots prior to cuts 1,2,3, and 4, at 100, 75, 50, and 50 kg N ha⁻¹ respectively. Phosphorous, potassium, and sulfur were added at sites where the soil tests indicated these nutrients deficient. In August and September, the Agassiz plots were

irrigated for a couple of weeks, and the Sumas plots received irrigation for a few days. Volunteer grasses (grass species invading the plots) had to be removed by hand. Again, Italian ryegrass was a considerable problem in the Chilliwack tall fescue and perennial ryegrass plots and the Rutley tall fescue plots. Quackgrass was a problem in the Sumas perennial ryegrass and tall fescue plots. Dyvel was used to control weeds.

Quantitative:

Plots measure 4ft by 20ft in the Chilliwack and Sumas sites and 5ft by 20ft in Agassiz. At harvest, field wet weights of a 2ft by 20ft swath cut by a swift current harvester in each plot were recorded. An approximately 500g sub-sample from each plot was taken to be oven-dried (<60 degrees Celsius until constant weight was maintained) to measure the moisture content of the grass at harvest. Sometimes sections of the plot were discarded at harvest because of mole hills, patches of weeds or volunteer grasses, or other causes. When this occurred, the plot length was measured in order to account for the missing samples.

Qualitative:

Maturity of the grass prior to the spring cut was recorded. We also recorded the susceptibility of some plots to invasion of volunteer grasses, and the susceptibility of some grasses to rust.

Highlights

Listed below are grass cultivars that significantly ($\alpha = 0.05$) out-yielded check cultivars in harvests compiled from 2004 and 2005.

- Orchardgrass
Agassiz: FSOG-1AM
Chilliwack: Century, FSOG-1E, MALL, OG9703, PSOG-9201
Sumas: EALL, FSOG-1E, LALL, MALL
- Perennial Ryegrass
Agassiz: Tetrylyte II
Chilliwack: none
Sumas: none
- Tall Fescue
Agassiz: Carmine, Hykor, Kora, Stockman, Tuscany
Chilliwack: none
Sumas: Carmine

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