Rolla

British Columbia

July 29, 1998

CANOLA COUNCIL OF CANADA

Rolla Canola Production Centre:
Sponsors: *without whom a lot of this work would not be possible.*
Thank you for your support.

Financial Funding
Alberta Canola Producers Commission
B.C. Peace River Agricultural Development Fund
Canola Council of Canada

Seed
Alberta Wheat Pool Ltd.
AgPro Grain Inc.
Canadian Seed Coaters
Cargill Seed
Limagrain Canada Inc.
PGS
Proven Seeds
Secan
Zeneca Seeds

Fertilizer
Esso Fertilizers: Jerry Rude Agri Sales

Herbicides and Seed Treatments
AgrEvo: Liberty
BASF: Poast
Cyanamid: Odyssey
DuPont: Muster Gold
Dow AgroSciences: Lontrel
Monsanto: Roundup
Rhone-Poulenc: Foundation

Soil Analyses
EnviroTest Laboratories-Saskatoon, Sask.

Field History-Rolla Site (SW 20-78-14-W6)

Last Crop- Wheat 40 bu/ac

Tillage- Fall: Heavy duty Cultivator and Anhydrous ammonia
Spring: Cultivator with mounted harrows

Fertilizer- Fall Anhydrous ammonia at 90 lb/ac of N

Soil Test- N 110 P 54+ K 292 S 40+

Seeding- Seeding May 6, 1998
Unless specified, fertilizer rate was 10-8-10-6 granular, applied with the seed.
Seed drill-Melroe Hoe Drill with eagle beaks
Seeding rates: Napus-7.2 lb/ac, rapa-5.4lb/ac.
Seeding depth: 3/4 inch

Herbicides- Poast (445ml/ac) Muster Gold (20 ac/cs) and Lontrel (225 ml/ac) May 28, 1998.

Transgenics sprayed: May 29, 1998 (Roundup 0.5 l/ac), Liberty (1.35 l/ac) and Odyssey (12 g/ac)

Target dates for swathing-
Polish (rapa)- third week in July
Argentine (napus)-first week in August

Canola
PRODUCTION CENTRE

napus Variety Trial

AC Excel
Hyola 401
Optimum 500
AC Excel
Optimum 500
Hyola 401

Optimum 500
AC Excel
Hyola 401
AC Excel
Hyola 401
Optimum 500

rapa Variety Trial

Foothills
Hysyn 120
Hysyn 110
Reward
Hysyn 110
Hysyn 120
Reward
Foothills

Hysyn 120
Hysyn 110
Foothills
Reward
Reward
Foothills
Hysyn 120
Hysyn 110

Systems Comparison Trial

AC Excel
Invigour 2153
Invigour 2163
45A71
46A73
46A74
Quest
LG 3295
AC Excel
46A73
45A71
46A74
LG 3295
Quest
Invigour 2153
Invigour 2163

Quest
LG 3295
AC Excel
Invigour 2163
Invigour 2153
46A73
46A74
45A71
AC Excel
Invigour 2163
Invigour 2153
Quest
LG 3295
46A74
45A71
46A73

Invigour 2153 no fert
Invigour 2153 + fert
41P55
Invigour 2153 + fert
Invigour 2153 no fert
41P55

Invigour 2153 + fert
41P55
Invigour 2153 no fert
41P55
Invigour 2153 no fert
Invigour 2153 + fert

Seed Treatment Trial (Rhone-Poulenc)

Foundation
Polymer
Polymer
Foundation

Polymer
Foundation
Foundation
Polymer

Root Maggot Control Trial

rapa @ 5lb/ac
rapa @ 10 lb/ac
napus @ 7 lb/ac
napus @ 14 lb/ac
rapa @ 10 lb/ac
napus @ 14 lb/ac
rapa @ 5lb/ac
napus @ 7 lb/ac

napus @ 7 lb/ac
rapa @ 5lb/ac
napus @ 14 lb/ac
rapa @ 10 lb/ac
napus @ 7 lb/ac
rapa @ 5lb/ac
napus @ 14 lb/ac
rapa @ 10 lb/ac

Smart
Smart
Invigour 2153
LG 3295
AC Excel

BASF Plots

Notes:

Canola Variety Descriptions:

Argentine Varieties: *Brassica napus*

Please note that all the varieties grown here in the variety trial are at the request and financial support of the seed developers. In most cases the varieties are suited to the area and its' growing conditions. In some cases, the developers are interested in getting information about the varietys' growth pattern outside its' normal growing area.

Hyola 401: (1991) Developed by Zeneca Seeds, this hybrid is adapted to mid-season, long season, and irrigated zones in Western Canada. Yield is 10.7% higher than Westar. Both protein and oil are slightly lower than Westar. Hyola 401 is 4 days later than Westar in maturity. The variety has superior standability, and shows reduced green seed compared to most other varieties. Blackleg = 4

Optimum 500 (D1-9116 , 1997) Developed by Danisco Seed in Denmark and tested by Agriprogress Inc. In two years of Co-op testing yields were 14.4% higher than the checks Legend, Excel and Cyclone in the Long (LSZ) season zone and 2.8% higher in the Mid (MSZ) season zone. Height is slightly taller than the checks. Maturity is equal to the checks. Lodging is slightly better than Cyclone. Oil content is higher +1.9% and protein content is higher +0.3%. Blackleg resistance is rated at "2" or moderately resistant. Marketed by Zeneca Seeds.

AC Excel (check variety): Developed by Agriculture Canada-Saskatoon (1990). This variety yields similar to Legend with higher oil content. Protein content is slightly lower. Lodging resistance is good. Maturity is 2 days later than Legend. Moderately resistant to root rot and blackleg rating is "3".

Polish Varieties: *Brassica rapa*

Polish canolas generally have less chlorophyll than Argentine varieties, and are therefore downgraded less often.

Hysyn 110: (1994) Developed by Zeneca Seeds Hysyn 110 yielded 9% higher than the average of the checks Parkland and Tobin, over 2 years in the Western Co-op Trials (1992-93). However, in the short season zone, Hysyn 110 yielded 13% higher. Hysyn 110 is a synthetic hybrid. Zeneca's in-house research shows that its yield is more stable across different environments, when compared to Hysyn 100. Hysyn 110's oil content is similar to Tobin's, as is its protein content. Days to maturity are similar to Parkland, one day later than Tobin in the years tested. Resistance to lodging is improved over Parkland and Tobin. Marketed by Zeneca Seeds.

Hysyn 120: (1996) A Cargill Seeds Brassica rapa synthetic variety. Tested in the mid season zone. In 2 years of testing, yields were 6.6% higher than the checks Tobin and AC Parkland. Maturity is similar to the checks. Slightly taller and slightly better lodging resistance. Oil content is higher (+0.7%) and protein is higher (+0.5%) than the checks. White rust resistance is similar in Tobin.

Foothills: Registered in 1997. Developed by Svalof Weibull Seed and tested by Pioneer Hi-Bred/UGG. In two years of Co-op testing yields were 6.4% higher than checks Parkland, Reward and Tobin in the Short (SSZ) and Mid (MSZ) season zones. Height is slightly taller than the checks. Maturity and lodging is similar to the checks. Oil content is similar +0.1% and protein content is higher +1.3% than the checks. White Rust resistance moderately susceptible with a disease incidence of 17% compared to 53.3% for Tobin.

Reward: Check Variety-(1991) Developed at the University of Manitoba, Reward has a yield similar to Tobin, but a higher oil content (+1.8%), and a higher protein content (+0.8%). Resistance to lodging is slightly less than Tobin. White rust = 1.

Rolla-1998 Plot Descriptions: (see plot plans)

Variety Trials: See separate section for variety descriptions.

Root Maggot Control Trial: Root maggots can be a serious pest of cruciferous crops. Initially thought to be a pest of *B. rapa* in the parkland region of Alberta. Recent survey results indicate that the root maggot is present in all canola growing regions with the potential to be a serious pest in both *B. napus* and *B. rapa.* Research at the University of Alberta and Alberta Environment Centre has shown that root maggots can reduce canola yields by up to 50%. Root maggots cause physical damage to roots when feeding. However, yield reductions may also result from disease entering the plant through the wounds made by root maggots. Although, to date no single control mechanism has been identified, a number of chemical and cultural control options are being studied. (see plot plan for treatments at this site). In this trial an Integrated Pest Management (IPM) approach has been used, that of seeding rate.

Root Maggot Monitoring Trial: The incidence and severity level of root maggots will be assessed in the *B. napus* and *B. rapa* variety trials. Any varietal differences in resistance to root maggots will be recorded.

Seed Treatment Trial: The most widespread problem of canola production is stand establishment. Poor stand establishment may be caused by a seedling disease complex including pathogens such a *Rhizoctonia solani*, along with *Fusarium* and *Pythium* species. Seed treatment fungicides are used extensively in canola production as a first line of defence to control seedling disease. This trial compares two different seed treatments manufactured by Rhone-Poulenc Inc. Foundation, and Foundation coated with a polymer.

Systems Comparison Trial: The introduction of canola with novel traits for herbicide tolerance has given producers many options for herbicide and variety selection. The greatest return will occur by choosing the most appropriate combination of suitable varieties and appropriate herbicides for each field. Factors to consider beyond the performance of the variety include weed population, weed spectrum, tillage system, and herbicide rotation. Entries in the systems comparison trial are on a contractual basis. In this trial, Roundup Ready, Liberty tolerant, and Smart (Odyssey tolerant) Canolas' are compared for their agronomic characteristics, as well as the efficacy of the weed control "system" for each. Contribution margins for each "type" will be reported in the annual report.

Harvestibility Trial: Currently a number of varieties have very similar yield and quality traits. In choosing a variety for his farm, a grower will consider such things as lodging, harvestability and yield. Harvestability is measure of swathing and combining ease. Currently, there is no meaningful scientific measurement for harvestability. Therefore, we use standardized criteria for a subjective measurement. Harvestability will be evaluated when we are swathing and combining the variety trials. The check varieties will be swathed and harvested first and used as the benchmark. We will evaluate harvestability on a scale of one to five with the check being three. The following criteria will be considered. Swathing - Lodging height, straw stiffness, straw strength, uniformity of stand, swath fluffiness (pod dispension), tendency to clump, flowability, speed of swathing. Combining - thrashability, speed of combining, flowability, and ease of feeding.