XV SYSTEMS COMPARISON TRIAL

Objective: To establish agronomic criteria for choosing among varieties and herbicide options of novel trait canola varieties.

Background: 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.

Methodology: The trial was conducted as a randomized complete block with four replicates. Seeding rates varied according to what the industry recommended (see ***Site Information***). The canola varieties with novel traits for herbicide tolerance were compared to the conventional varieties Hyola 401 and Q2 and a conventional herbicide program. All of the herbicide tolerant varieties were sprayed with their respective recommended herbicides at the recommended rates. Canopy closure was determined by the number of days after planting (DAP) required for the variety to reach 95 % ground cover.

Observations: The trial was seeded on May 16 into good moisture. Weed populations were relatively low and patchy with primary weeds including Canada thistle, dandelions, lamb's quarters, foxtails and some patches of quackgrass. Enough weeds of each kind were present in the conventional treatments that a complete weed control mixture (Stinger, Assure II and Muster) was required. All applications were done in the early morning to avoid drift into neighboring plots that were not tolerant to the same herbicide. The Roundup Ready varieties were sprayed the day before the other varieties. The crop was at the 3-leaf stage at the time of herbicide application. Rider and Hyola 357 reached canopy closure at 29 days after planting (DAP). Q2 was the slowest at 37 DAP. All other varieties reached canopy closure at 30 to 32 DAP. Hail damage from the August 17 storm was most severe on the systems comparison trial with damage estimates between 10 and 15 % across all the plots. Yields were not adjusted for hail damage.

Results:

SYSTEMS COMPARISON TRIAL Thief River Falls, MN							
System	**Yield (%)**	**Yield (lb/ac)**	**Yield (bu/ac)**	**Contribution Margin ($/ac)**	**Oil (%)**	**Growing Degree Days**	**Days To Maturity**
Conventional							
Hyola 401	100	2003	40.1	32.17	41.1	1193	87
Q2	90	1805	36.1	24.22	41.1	1193	87
Clearfield (Raptor Tolerant)							
46A76	84	1679	33.6	31.47	41.5	1193	87
Liberty Link							
InVigor 2573	93	1859	37.2	35.98	41.0	1167	85
InVigor 2663	89	1786	35.7	28.50	41.6	1155	84
Roundup Ready							
Hyola 357	97	1942	38.8	46.33	40.9	1179	86
LiBred 499RR	89	1783	35.7	33.12	41.0	1167	85
DKL34-55	86	1726	34.5	33.53	41.6	1155	84
DKL35-25	86	1718	34.4	32.79	41.9	1167	85
DKL23-38	84	1686	33.7	33.04	41.8	1135	83
Gladiator	84	1675	33.5	27.94	41.5	1135	83
LS296RR	83	1669	33.4	25.69	40.6	1135	83
SW BadgeRR	83	1655	33.1	27.13	40.7	1167	85
DS Roughrider	82	1636	32.7	30.13	42.9	1193	87
RideR	81	1632	32.6	24.64	41.3	1135	83
LSD CV%		156.2 7.5	3.12 7.5		0.80 1.6		1.4 1.4

Discussion: Yields for Hyola 401 and Hyola 357 were significantly higher than most of the other varieties tested. Hyola 357 had the best contribution margin. Contribution margins reflect differences in seed costs, yield and herbicide costs. DS Roughrider had significantly higher oil than the other varieties. The hot conditions during swathing appeared to minimize differences in maturity among varieties.