1986-87 WINTER RAPESEED VARIETY TRIAL AT MADRAS, OREGON

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ABSTRACT

Ten varieties of edible oil type winter rapeseed (Brassica napus L.) were evaluated at the Central Oregon Experiment Station Madras site in 1986-87.

All cultivars were vigorous and survived the mild winter. Flowering began the end of March. Cascade flowered earliest followed by Santana, Lindora, and Liradonna. The average plant height was 47 inches - rather short compared to previous years. The tallest variety was Glacier at 50.5 inches. No variety lodged. Most varieties were similar in yield (ave. of 3680 lbs/A). Cascade had the lowest yield, shortest height, and smallest seed.

INTRODUCTION

Export market opportunities exist for edible oil rapeseed (1). Canada has developed a rapeseed industry based on the marketing of oil low in erucic acid (2% or less) and a meal low in glucosinolates (30 u moles/g or less). Canola is the Canadian term coined for varieties with these specifications (2). Canada has little competition in world export markets; however, the Pacific Northwest and other areas in the U.S. may be able to successfully produce Canola type rapeseed and provide competition. There is also a growing domestic use of rapeseed oils which could eventually surpass the export in volume.

The Central Oregon Experiment Station has been involved in the evaluation of both winter and spring type rapeseed varieties for about a decade in the search for alternative crops (3). A new Oregon winter rapeseed variety evaluation program was initiated in 1986 because of interest by Mitsubishi Corporation, a Japanese oil handler and processor.

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The 1986-87 winter rapeseed variety test at Madras was part of a four-site Oregon testing program.

MATERIALS AND METHODS

Ten winter rapeseed varieties from as many sources (Table 1) were planted August 22, 1986 at Madras. Each entry was replicated four times in a randomized complete block design. Fertilizer was preplant incorporated - 400 lbs/A of 16-20-0-15(S) impregnated with Treflan (1.0 lb ai/A). Seed was sown at a rate of six lbs/A (14 seeds/sq. ft.) in rows eight inches apart. Plots were five feet wide by 20 feet long.

Malathion 5E (1.25 lb ai/A) was applied September 8, 1986 for aphid control.

The trial was irrigated as needed. No post emergence herbicides or fungicides were applied.

Outside rows of each plot and three feet from each end were removed prior to swathing by hand on June 24, 1987. Swathed material was threshed with a Hege combine on July 7. The seed was cleaned with an M-2B Clipper air screen machine. Seed was weighed and yields were calculated. Data were also collected on maturity, plant height, and 1,000 seed weight.

RESULTS AND DISCUSSION

All varieties were vigorous and showed good winter survival - the winter weather was mild. The fall aphid infestation was the only insect problem observed. Cascade began flowering the end of March. It reached 50% bloom on April 10, 1987. Estimated dates of 50% bloom for Santana, Lindora and Liradonna were April 15 with the remaining cultivars reaching this stage on April 20-21. Tandem was the latest variety as evidenced by green pods later in the season. All cultivars matured rather rapidly due to hot weather.

Plant height at maturity was much shorter than observed in previous years for both winter and spring type rapeseed varieties. In this trial Cascade was significantly shorter than other cultivars except Tandem (Table 1). The tallest variety, Glacier, was only 50.5 inches. Lodging did not occur for any variety.

The average seed yield (3680 lbs/A) for all varieties in the trial was the highest observed in the history of rapeseed variety testing at the Central Oregon Experiment Station (3).

Seed yield was similar for all cultivars except Cascade and Viking which were lower. Cascade has yielded 5469 lbs. of

seed per acre in Idaho where it was developed (4). This and other research indicates that rapeseed may not be an economically competitive crop in Central Oregon. The 1,000 seed weight for Cascade was similar to Santana and Viking but significantly lower than the other varieties. Generally, the seed weights were less than those of the seed lots used to plant the test.

There may be several winter rapeseed varieties that could be grown in Central Oregon; however, many factors must be considered before attempts are made to introduce rapeseed as an alternative crop. Some of these include its economic competitiveness with other crops in the area and other production areas and its compatibility with other crops in the area. These and other factors must be thoroughly investigated before rapeseed production is undertaken in Central Oregon.

REFERENCES

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Table 1. Source, erucic acid and glucosinolate level, height, 1,000 seed weight, and seed yield of ten winter rapeseed varieties at Madras, Oregon, 1986-87

Variety	Source[1]	EA/GLUC level[2]	Height	1000 seed weight	Seed yield
			in	g	lb/A
Cascade	U. of Idaho	Low/Low	42.8	4.38	2721
Ceres	Alan Hick & Assoc.	Low/Low	47.3	5.02	3624
Glacier	Normarc Seeds	Low/Low	50.5	5.28	3842
Lindora	Canola, Inc.	Low/?	48.0	5.11	3694
Lirabon	Burlingham & Sons	Low/Low	45.5	4.84	4322
Liradonna	Alan Hick & Assoc.	Low/Low	48.0	4.86	4282
Mitre	Nickerson RPB LTD	Low/Int.	46.0	5.07	3738
Santana	Agrimax-Hilsenkopf	Low/Low	47.8	4.48	3836
Tandem	Various	Low/Int.	43.8	5.18	4015
Viking	Daehnfeldt, Inc.	Low/Low-Int.	47.8	4.64	2721
		Mean	46.7	4.89	3680
		LSD (5%)	2.5	0.40[3]	896[3]
		CV (%)	4	6	17

1 Source = Originator or distributor.
2 EA = erucic acid in the oil; GLUC = glucosinolate in the defatted seed meal; EA Level: low = <2%; GLUC Level: low = <30 u moles/g of glucosinolate.
3 This value is the PLSD (5%).