

THE EFFECT OF DEEP BANDING, BROADCASTING AND SEED PLACEMENT  
OF N P FERTILIZERS ON REGENT CANOLA AND NAPAYO WHEAT - 1981

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The use of equipment that will place N and P fertilizers in a band at a depth of 10 to 15 cm and in row widths of 20 to 30 cm has become a general practice. Little information on the relative efficiency of banding, broadcasting and seed placed N and P is available on different field crops. In Table 1, the treatment of 75 kg N broadcast and 30 kg P seed placed gave the highest ranked yield. However, deep banding (across seed) of N and placing one half of the P (10 kg/ha) with the seed and the other half deep banded (across seed) produced a yield that was not significantly lower. One might suspect that the heavy rate of 30 kg P/ha with the seed would have reduced emergence and therefore grain yield. A general observation is that the highest yields occurred with treatments that had the highest rates of P applied. Logical ranking of treatments is obscured by the high variation in results brought about by low soil moisture conditions in the spring of 1981.

With Napayo wheat (Table 2), the highest ranked yields were obtained with additional phosphate fertilizer deep banded parallel with the seed. These treatments contained 13 kg P/ha with the seed and produced the highest yields in most cases when P was deep banded.

Summary

In a first year experiment comparing deep banded, broadcast and seed placed N and P fertilizer, seed placed and deep banded applications gave similar results with Regent rape. Deep banded application of P on Napayo wheat tended to give a higher yield than broadcast application.

Table 1. Deep Band (10 cm), Broadcast, Seed Place  
N and P On Regent Canola - MSIC - 1981

	Treatment		Yield kg/ha	Homogeneous Subsets							
	N (kg/ha)	P		1	2	3	4	5	6	7	
6	75 BR	30 S	1200	*							
23	75 BA	20 S + BA	1130	*	*						
21	75 BA	30 BA	1080	*	*	*					
9	75 BR	30 BA	1067	*	*	*	*				
24	75 BA	30 S + BA	1063	*	*	*	*				
18	75 BA	30 S	1047	*	*	*	*	*			
17	75 BA	20 S	1020	*	*	*	*	*	*		*
10	75 BR	10 S + BA	1005	*	*	*	*	*	*	*	*
5	75 BR	20 S	1003	*	*	*	*	*	*	*	*
22	75 BA	10 S + BA	933	*	*	*	*	*	*	*	*
4	75 BR	10 S	918	*	*	*	*	*	*	*	*
12	75 BR	30 S + BA	899	*	*	*	*	*	*	*	*
7	75 BR	10 BA	873	*	*	*	*	*	*	*	*
16	75 BA	10 S	851	*	*	*	*	*	*	*	*
1	75 BR	0	843	*	*	*	*	*	*	*	*
8	75 BR	20 BA	839		*	*	*	*	*	*	*
15	11 BA	20 BA	798		*	*	*	*	*	*	*
3	11 S	20 S	734			*	*	*	*	*	*
11	75 BR	20 S + BA	727			*	*	*	*	*	*
19	75 BA	10 BA	708				*	*	*	*	*
20	75 BA	20 BA	707				*	*	*	*	*
14	0	0	698					*	*	*	*
13	75 BA	0	679						*	*	*
2	0	0	559							*	*

BR = Broadcast and Incorporated

BA = Deep Banded to 10 cm Depth, 23 cm Width perpendicular  
to seeding direction

S = Seed Placed

S + BA = One Half Fertilizer Seed Placed, Other Half Deep  
Banded

P - test = 5.4  $\mu$  g P/g

N - test = 19.5  $\mu$  g N/g soil

Table 2. Effect Of Placement Of Phosphorus Fertilizer On Yield Of Napayo Wheat, Sown Perpendicular To Alfalfa - Melfort

Treatment		P		Wheat Yield	Homogeneous Subsets		
N	Seed Placed	Additional BR, BA, SB	kg/ha		1	2	3
			kg/ha	kg/ha			
3	60 BR	13.1	21.8 BA	1857	*		
14	60	13.1	43.7 + 30 S + 108 K	1851	*		
5	60	13.1	65.5	1792	*		
10	60	13.1	87.3 BR	1677	*	*	
13	60 BA	13.1	43.7 BA	1596	*	*	*
15	60 BR	13.1	43.7 BR + 30 S + 108 K	1510	*	*	*
9	60	13.1	65.5	1509	*	*	*
4	60	13.1	43.7 BA	1500	*	*	*
2	60	13.1	0.0	1495	*	*	*
8	60	13.1	43.7 BR	1489	*	*	*
16	60	13.1	43.7 SB	1406		*	*
7	60	13.1	21.8 BR	1374		*	*
6	60	13.1	87.3 BA	1358		*	*
1	60	0	0.0	1301		*	*
12	60	13.1	21.8 BR	1273			*
11	60	13.1	10.9	1248			*

P - test = 6.5  $\mu$  g P/g      N - test = 28.3  $\mu$  N/4 g

BA = Deep Banded To 10 cm Depth, 30 cm Width Parallel With Wheat

BR = Broadcast and Incorporated

SB = Side Band 2.5 cm Below and 2.5 cm to Side of Seed

Seeding was at row spacing of 15 cm.