P Load Contribution Calculations

To calculate the percentage of P loss from 11,650,000 acres would contribute 937 or 1200 metric tonnes to Lake Winnipeg, the following calculations were used.

Note: The Lake Winnipeg Stewardship Board – interim report, estimated that agriculture in Manitoba contributed 937 metric tonnes of P to the total P load. The Lake Winnipeg Stewardship Board’s final report, amended this amount to 1200 metric tonnes.

Using 15 ppm soil test P as the provincial average for all Manitoba cropland, the total Phosphorus soil test P in tonnes is found as:

11,650,000 acres x 15 ppm x 2 = 349,500,000 lbs of P
349,500,000 lbs of P / 2000 lbs/ton = 174,750 tons of P
174,750 tons of P x .907 = 158,498.25 tonnes of P

To calculate what the percentage loss of the total P would contribute 937 tonnes, or 1200 tonnes of P to Lake Winnipeg:

937 tonnes / 158,498 x 100 = .59 % (constant factor)
1200 tonnes / 158,498 x 100 = .757% (constant factor)

To calculate this tonnage contribution at differing soil test concentrations, the following calculation can be used:

742,000 acres x ppm x 2 = lbs of P
Lbs of P / 2000 x .907 = tonnes of P
Tonnes of P x factor of .757, or .59 = tonnes of P contributed to Lake Winnipeg

To calculate the percentage of contribution to Lake Winnipeg, choose one of the three source categories:

1) “Total P Load to Lake Winnipeg (All Sources)”
2) “Total P Load to Lake Winnipeg (All Manitoba Sources)”
3) “Total P Load to Lake Winnipeg (All Manitoba Agriculture Sources)”

Tonnage of P contributed / source category x 100 = % contribution of source category