

APPENDIX 5

Quackgrass Spreadsheet (Lotus 123 v.3.1) Model Cell Format Codes

A:C2: {SWISS14 Bold} PR 'UNIVERSITY OF MANITOBA
 A:O2: {SWISS14 Bold} PR 'UNIVERSITY OF MANITOBA
 A:C3: {SWISS14 Bold} PR 'ANNUAL CROP - QUACKGRASS INTERFERENCE
 CALCULATOR
 A:O3: {SWISS14 Bold} PR 'ANNUAL CROP - QUACKGRASS INTERFERENCE
 CALCULATOR
 A:C6: {Bold} PR 'MODEL INPUT
 A:O6: {Bold L} PR 'MODEL OUTPUT
 A:C9: {Bold} PR ' CROP
 A:O9: {Bold L} PR ' QUACKGRASS
 A:D11: {Bold} PR 'CROP CHARACTERISTICS
 A:S11: {S1} PR ^YEAR 1
 A:U11: {S1} PR ^YEAR 2
 A:W11: {S1} PR ^YEAR 3
 A:F12: {S1} PR ^WHEAT
 A:H12: {S1} PR ^FLAX
 A:J12: {S1} PR ^P. CANOLA
 A:P13: {Italics} PR ' SPRING SHOOT NUMBERS
 A:S13: {Shadow LRTB} (F0) PR +F78
 A:U13: {Shadow LRTB} (F0) PR +H78
 A:W13: {Shadow LRTB} (F0) PR +J78
 A:D14: {Italics} PR ' CROP YIELD
 A:F14: {Shadow LRTB} (F1) U 32.8
 A:G14: {DUTCH8} (F1) PR [W5] ^(33bu/A)
 A:H14: {Shadow LRTB} (F1) U 17.8
 A:I14: {DUTCH8} (F1) PR [W5] ^(18bu/A)
 A:J14: {Shadow LRTB} (F1) U 18.1
 A:K14: {DUTCH8 R} PR [W5] ^(18bu/A)
 A:P15: {Italics} PR ' SHOOT NUMBERS AT HARVEST
 A:S15: {Shadow LRTB} (F0) PR +F79
 A:U15: {Shadow LRTB} (F0) PR +H79
 A:W15: {Shadow LRTB} (F0) PR +J79

A:D16: {Italics} PR ' CROP PRICE
 A:F16: {Shadow LRTB} (C2) U 3
 A:G16: {DUTCH8} (C2) PR [W5] '(\$5.31/bu)
 A:H16: {Shadow LRTB} (C2) U 6
 A:I16: {DUTCH8} (C2) PR [W5] '(\$8.80/bu)
 A:J16: {Shadow LRTB} (C2) U 6.5
 A:K16: {DUTCH8 R} PR [W5] '(\$8.34/bu)
 A:P17: {Italics} PR ' BUD NUMBERS AT HARVEST
 A:S17: {Shadow LRTB} (F0) PR +F80
 A:U17: {Shadow LRTB} (F0) PR +H80
 A:W17: {Shadow LRTB} (F0) PR +J80
 A:D19: {Bold} PR 'CROP ROTATION
 A:F20: {S1} PR ^YEAR 1
 A:H20: {S1} PR ^YEAR 2
 A:J20: {S1} PR ^YEAR 3
 A:O20: {Bold L} PR ' CROP
 A:D22: {Italics} PR ' CROP GROWN
 A:F22: {Shadow LRTB} U 'W
 A:H22: {Shadow LRTB} U 'W
 A:J22: {Shadow LRTB} U 'F
 A:S22: {S1} PR ^YEAR 1
 A:U22: {S1} PR ^YEAR 2
 A:W22: {S1} PR ^YEAR 3
 A:Y22: {S1} PR ^TOTAL
 A:F23: {DUTCH8} PR ^ (USE : C = POL. CANOLA, F = FLAX, W = RS WHEAT)
 A:S23: {S1} PR +F22
 A:U23: {S1} PR +H22
 A:W23: {S1} PR +J22
 A:P24: {Italics} PR ' YIELD LOSS PER CENT
 A:S24: {Shadow LRTB} (P0) PR +F81/100
 A:U24: {Shadow LRTB} (P0) PR +H81/100
 A:W24: {Shadow LRTB} (P0) PR +J81/100
 A:C26: {Bold} PR ' QUACKGRASS
 A:P26: {Italics} PR ' YIELD LOSS \$ VALUES
 A:S26: {Shadow LRTB} (C2) PR +F82
 A:U26: {Shadow LRTB} (C2) PR +H82
 A:W26: {Shadow LRTB} (C2) PR +J82
 A:Y26: {Shadow LRTB} (C2) PR +L82
 A:D28: {Bold} PR 'INITIAL INFESTATION
 A:D30: {Italics} PR ' YEAR 1 QUACKGRASS SHOOTS/sqM
 A:H30: {Shadow LRTB} U 60
 A:I30: {Italics} PR [W5] "AT
 A:F32: {Shadow LRTB} U 30
 A:G32: {Italics} PR [W5] ' DAYS AFTER PLANTING
 A:F33: {DUTCH8} PR ^(Model based on 30 DAP)
 A:D35: {Bold} PR 'WINTER SURVIVAL OF BUDS
 A:F37: {S1} PR ^BETWEEN

A:H37: {S1} PR ^BETWEEN
 A:F38: {S1} PR ^YEARS
 A:H38: {S1} PR ^YEARS
 A:F39: {S1} PR ^1 and 2
 A:H39: {S1} PR ^2 and 3
 A:D40: {Italics} PR ' PER CENT SURVIVAL
 A:F40: {Shadow LRTB} U 95
 A:G40: {DUTCH8} PR [W5] "(95 %)
 A:H40: {Shadow LRTB} U 95
 A:I40: {DUTCH8} PR [W5] "(95 %)
 A:D43: {Bold} PR 'SPRING BUD EMERGENCE
 A:H45: {S1} PR ^SPRING 2
 A:J45: {S1} PR 'SPRING 3
 A:D47: {Italics} PR ' PER CENT OF BUDS EMERGING
 A:H47: {Shadow LRTB} U 25
 A:J47: {Shadow LRTB} U 25
 A:H48: {DUTCH8} PR "(25% if no herbicide, 60% if herbicide applied)
 A:D50: {Bold} PR 'IN-CROP HERBICIDE KILL FACTOR
 A:F52: {S1} PR ^WHEAT
 A:H52: {S1} PR ^FLAX
 A:J52: {S1} PR ^CANOLA
 A:D54: {Italics} PR ' % MORTALITY
 A:F54: {Shadow LRTB} (F0) U 0
 A:H54: {Shadow LRTB} (F0) U 90
 A:J54: {Shadow LRTB} (F0) U 95
 A:B60: {Bold} PR [W3] 'WORKSHEET
 A:C62: PR 'WHEAT VALUE / ACRE
 A:F62: {B} (C2) PR +F14*F16
 A:C63: PR 'FLAX VALUE / ACRE
 A:F63: {B} (C2) PR +H14*H16
 A:C64: PR 'CANOLA VALUE / ACRE
 A:F64: {B} (C2) PR +J14*J16
 A:C66: PR 'SAMPLE DATE FORMULA
 A:F66: PR '2.5+1.061*(DAP)=DTM%
 A:I66: PR [W5] 2.5+1.061*(30)
 A:J66: PR '% is 30 DAP
 A:C67: PR 'SHOOT AUTOREGRESSION
 A:F67: (F0) PR '13.407+(2.479*SS)=FS
 A:C68: PR 'SHOOT/BUD ALLOMETRY
 A:F68: (F0) PR '(@EXP(1.458))*(FS^1.075)=FB
 A:C69: PR 'WHEAT YIELD FORMULA
 A:F69: (F1) PR '98.7*(1-((0.43*FS)/(100*(1+(0.43*(FS/194))))))=WY%
 A:C70: PR 'FLAX YIELD FORMULA
 A:F70: (F1) PR '100*(1-((2.07*FS)/(100*(1+(2.07*(FS/130))))))=FS%
 A:C71: PR 'CANOLA YIELD FORMULA
 A:F71: (F1) PR '100*(1-((0.41*FS)/(100*(1+(0.41*(FS/141))))))=CY%
 A:C74: PR 'OVERWINTER BUD SURVIVAL

A:H87: (F1) PR $100 * (1 - ((0.41 * H78) / (100 * (1 + (0.41 * (H78 / 141))))))$
 A:J87: (F1) PR $100 * (1 - ((0.41 * J78) / (100 * (1 + (0.41 * (J78 / 141))))))$
 A:E89: (F1) PR ^YL%
 A:F89: {S1} (F1) PR @IF(F22="F",100-F86,@IF(F22="W",100-F85,@IF(F22="C",100-F87,'ERR'))))
 A:H89: {S1} (F1) PR
 @IF(H22="F",100-H86,@IF(H22="W",100-H85,@IF(H22="C",100-H87,'ERR'))))
 A:J89: {S1} (F1) PR @IF(J22="F",100-J86,@IF(J22="W",100-J85,@IF(J22="C",100-J87,'ERR'))))
 A:C91: (F1) PR % HERBICIDE MORTALITY
 A:F91: {S1} (F1) PR @IF(F22="F",\$H54,@IF(F22="W",\$F54,@IF(F22="C",\$J54,'ERR'))))
 A:H91: {S1} (F1) PR @IF(H22="F",\$H54,@IF(H22="W",\$F54,@IF(H22="C",\$J54,'ERR'))))
 A:J91: {S1} (F1) PR @IF(J22="F",\$H54,@IF(J22="W",\$F54,@IF(J22="C",\$J54,'ERR'))))