

**A**

Ste20\_P+\_Ste11; ! <Input>  
 <Input>; OR [Pher]; OR [Osmo]  
 Ste5\_ppi\_Ste11; ! [Pher]  
 Sho1\_ppi\_Ste11; ! [Osmo]  
 Ste11\_P+\_Ste7; ! Ste11-{P}; ! Ste5--Ste11  
 Ste11\_P+\_Pbs2; ! Ste11-{P}; ! Sho1--Ste11  
 Ste7\_P+\_Fus3; ! Ste7-{P}  
 Pbs2\_P+\_Hog1; ! Pbs2-{P}  
 [MATING]; ! Fus3-{P}  
 [TURGOR]; ! Hog1-{P}

**B**

Sho1 = True  
 Fus3 = True  
 Ste20 = True  
 Ste11 = True  
 Hog1 = True  
 Ste7 = True  
 Ste5 = True  
 Pbs2 = True

Ste11-\_P\_ = False  
 Sho1--Ste11 = False  
 Ste5--Ste11 = False  
 Hog1-\_P\_ = False  
 Fus3-\_P\_ = False  
 Ste7-\_P\_ = False  
 Pbs2-\_P\_ = False

Ste7\_P+\_Fus3 = False  
 Ste5\_ppi\_Ste11 = False  
 Ste11\_P+\_Ste7 = False  
 Ste11\_P+\_Pbs2 = False  
 Sho1\_ppi\_Ste11 = False  
 Pbs2\_P+\_Hog1 = False  
 Ste20\_P+\_Ste11 = False

Pher = False  
 MATING = False  
 TURGOR = False  
 Osmo = False

MATING \*= Fus3-\_P\_  
 TURGOR \*= Hog1-\_P\_

Ste11-\_P\_\* = (Ste20\_P+\_Ste11) or Ste11-\_P\_  
 Sho1--Ste11 \*= (Sho1\_ppi\_Ste11)  
 Ste5--Ste11 \*= (Ste5\_ppi\_Ste11)  
 Hog1-\_P\_\* = (Pbs2\_P+\_Hog1) or Hog1-\_P\_  
 Fus3-\_P\_\* = (Ste7\_P+\_Fus3) or Fus3-\_P\_  
 Ste7-\_P\_\* = (Ste11\_P+\_Ste7) or Ste7-\_P\_  
 Pbs2-\_P\_\* = (Ste11\_P+\_Pbs2) or Pbs2-\_P\_

Ste7\_P+\_Fus3 \*= Ste7 and Fus3 and Ste7-\_P\_  
 Ste5\_ppi\_Ste11 \*= Ste5 and Ste11 and Pher  
 Ste11\_P+\_Ste7 \*= Ste11 and Ste7 and Ste11-\_P\_ and Ste5--Ste11  
 Ste11\_P+\_Pbs2 \*= Ste11 and Pbs2 and Ste11-\_P\_ and Sho1--Ste11  
 Sho1\_ppi\_Ste11 \*= Sho1 and Ste11 and Osmo  
 Pbs2\_P+\_Hog1 \*= Pbs2 and Hog1 and Pbs2-\_P\_  
 Ste20\_P+\_Ste11 \*= Ste20 and Ste11 and (Pher or Osmo)

**C**

Sho1 = False  
 Fus3 = False  
 Ste20 = False  
 Ste11 = False  
 Hog1 = False  
 Ste7 = False  
 Ste5 = False  
 Pbs2 = False

Pher = False  
 MATING = False  
 TURGOR = False  
 Osmo = False

MATING \*= Fus3  
 TURGOR \*= Hog1

Sho1 \*= Osmo  
 Fus3 \*= Ste7  
 Ste20 \*= Pher or Osmo  
 Ste11 \*= Ste5 and Ste20 or Sho1 and Ste20  
 Hog1 \*= Pbs2  
 Ste7 \*= Ste11  
 Ste5 \*= Pher  
 Pbs2 \*= Ste11