



Ameden, 2008  
APHIS, 2011

Intervention  
subsystem

Control through  
IPM strategies

Distribution  
of the pest

Commodity  
flow

Control through trade  
restrictions, phytosanitary  
measures, etc.

Ecological  
subsystem

Human-mediated  
dispersal  
subsystem

Exchange of  
state  
information

Mapping  
nodes to cells

Natural dispersal  
modeled by CA

Pest potential distribution  
as a function of biotic &  
abiotic factors derived  
from ecological models

Multi-network ABM

Logistics

Global trade

Travel

Rebaudo et al. 2011  
Ponti et al. 2015

Carrasco et al., 2012  
Harwood et al., 2009  
Lookingbill et al., 2010  
Pautasso et al., 2010

Field experiments,  
insect database,  
climate data,  
tuta absoluta datasheet  
(see Table 1)

FAO, CABI  
www.tutaabsoluta.com  
NASS, APHIS  
USDA, ICIPE  
openflights.org

Implementation

Literature

Data