

Critical factors for pollen;

- 1) Duration of release (interval ~10am - ~4pm)
- 2) Intensity of release (time series of intensity)
- 3) Viability interval (minima and maxima optimals)
- 4) Quantitative release functions
 - a) Solar forcing
 - radiative flux (photosynthetic and bulk)
 - temperature (optimal range)
 - humidity (Rh, absolute; optimal range)
 - b) Dynamic forcing
 - plant surface wetness, release threshold
 - wind speed at canopy (release height)
 - wind speed at ground (re-entrainment height)
 - turbulence in surface layer (threshold u^*)
- 5) Transport time, distance, direction
 - a) Time length of viability (variation with time of day)
 - determines length of time for dispersive processes
 - must maintain viability to deposition
 - b) Vertical dispersion
 - atmospheric stability
 - boundary layer eddy processes
 - gravitational/settling velocity
 - synoptic fronts
 - c) Horizontal dispersion
 - topographic forcing/channelling
 - local diurnal circulations
 - synoptic impingement
 - boundary layer eddy processes
- 6) Surface collection (viable)
 - a) surface inhomogeneity
 - b) surface roughness elements
 - c) presence of surface moisture
 - d) impaction/collection efficiency at velocity