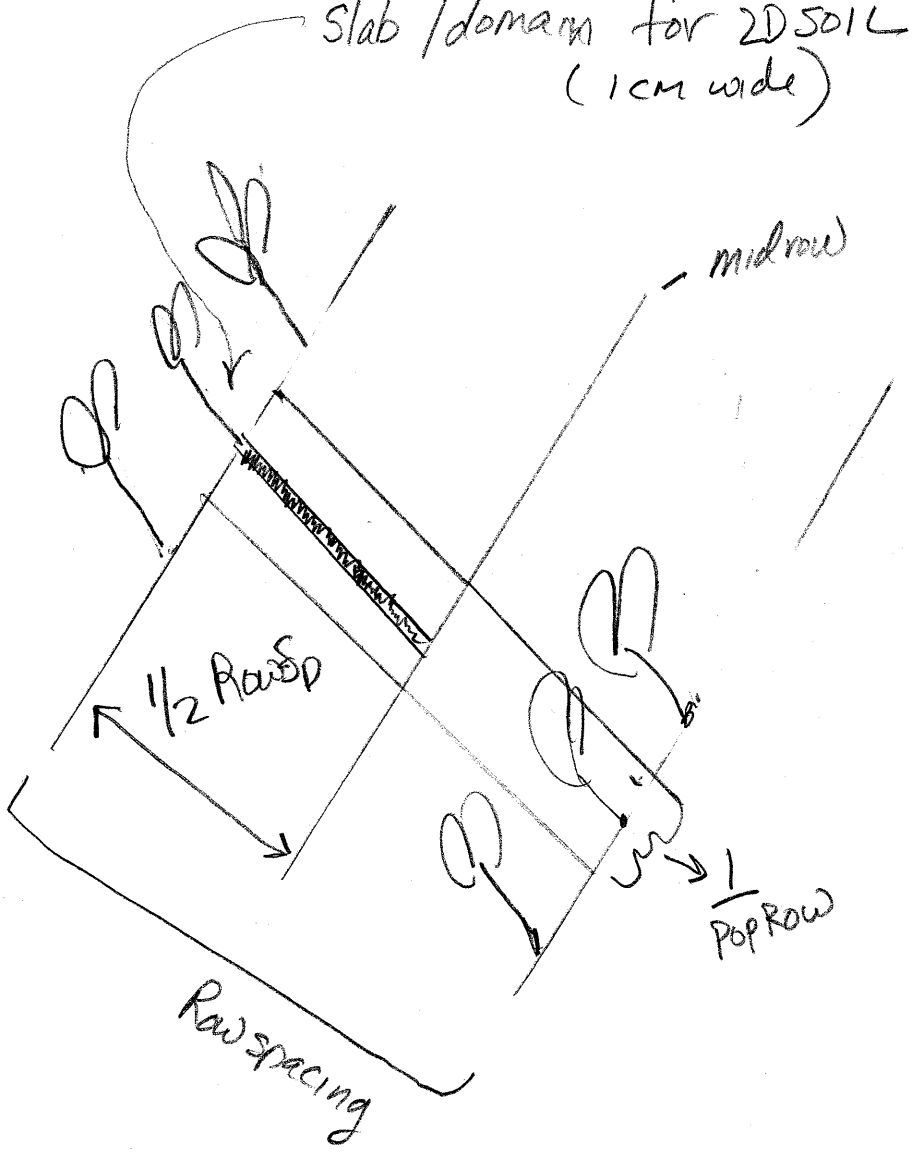
①



Plants per Meter Row — PopRow

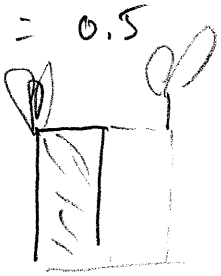
Row spacing — RowSp

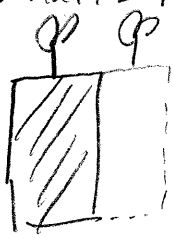
Plants per meter^2 — Plant Density

Plants per Slab — PopSlab — 1cm wide × $\frac{\text{EoMult}}{\text{RowSp}}$

Plants pe — Pop Area

Eo Mult = 0.5 — Eo Mult = 1.0





note symmetry, Row Spacing is

(2)

distance between plants

when Eo Mult = 0.5, plant is on left side (or right) of 2D SOIL domain, domain width = 1/2 row spacing

when Eo Mult = 1.0 plant is in center of 2D soil domain and domain width = row spacing

the variable PopSlab is needed to scale water, carbon, P, N, etc from the plant to soil.

all simulations consider one plant

Plants per meter Row $= \frac{P}{M}$

row spacing $= M$

Plants per $m^2 = \frac{P}{M^2}$

hence PopRow $\times$ $1/_{Rowsp} = \frac{P}{M^2}$

distance between 2 plants is (m)

$$\frac{1}{Poprow}$$

thus the half row width area a plant occupies is

$$\frac{1}{Poprow} \times \text{rowspacing} \times \text{EoMult} - \text{units are } M^2$$

③ Thus, if use have 6 plants per Meter row and 0.75 m row spacing

$$\text{Plant pop} = \frac{6}{0.75} = 8 \text{ plants}/m^2$$

~~the area~~ ↑ the half row width a plant occupies:

$$\frac{1}{6} \cdot 0.75 \times \underset{(0.5)}{E_o \text{ Mult}} = .0625\ m^2 \quad \text{or } 625 cm^2$$