

Prototype 1



Lacking funding for a full-sized sprayer, we developed a prototype of what we are wishing to install and tested its parameters in house. It showed that the seed will move as we hoped (flip to view data tables). With this a single-pass system could render cover crop seeders obsolete and help farmers increase efficiency on the farm.



Class of 2023

Ethan Elsbury
Joshua Likens
Broc Kissel
& Drew Flanders

Sponsor
Seth Harden ~ The Nature
Conservancy

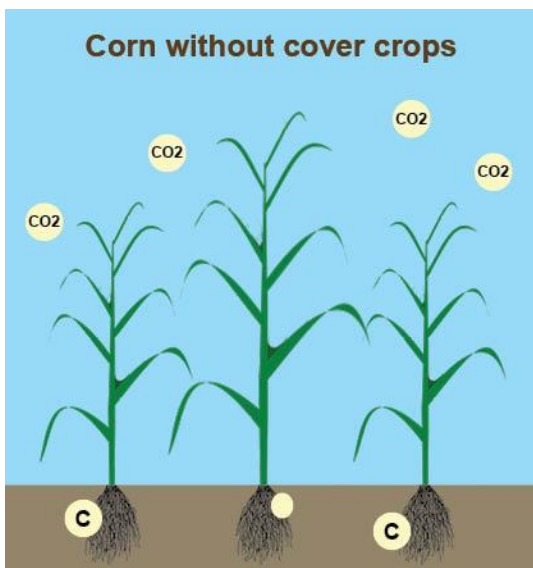


<https://www.nature.org/en-us/>

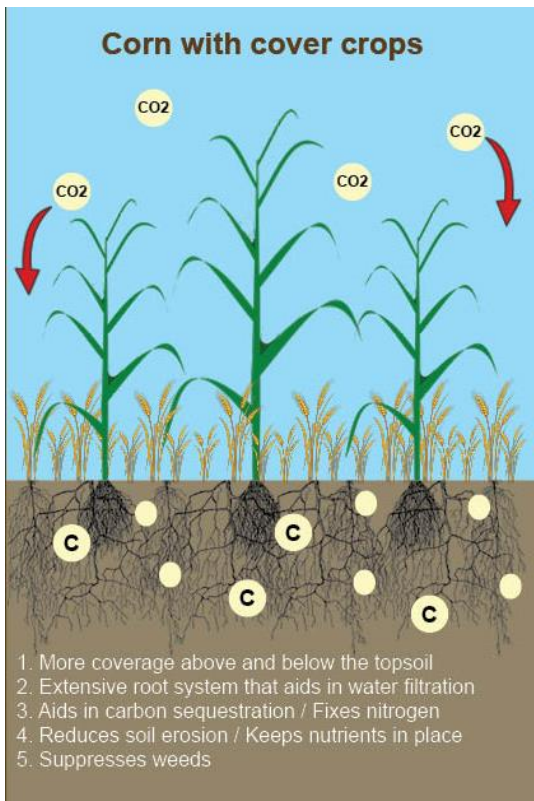
NC-1 Cover Crop Applicator



*A Single Pass Solution
For Cover Crop &
Chemical Application*



Cover crops provide key nutrients for soil to produce future crops, but the process of planting cover crops has turned many farmers away.



1. More coverage above and below the topsoil
2. Extensive root system that aids in water filtration
3. Aids in carbon sequestration / Fixes nitrogen
4. Reduces soil erosion / Keeps nutrients in place
5. Suppresses weeds

Our product design reaches to combat this issue by offering a bolt on system for current equipment that will allow the farmer to apply seed and chemical in the same pass. It combines our custom seed tanks with a blower system, distribution system, and tubes that are already on the market.

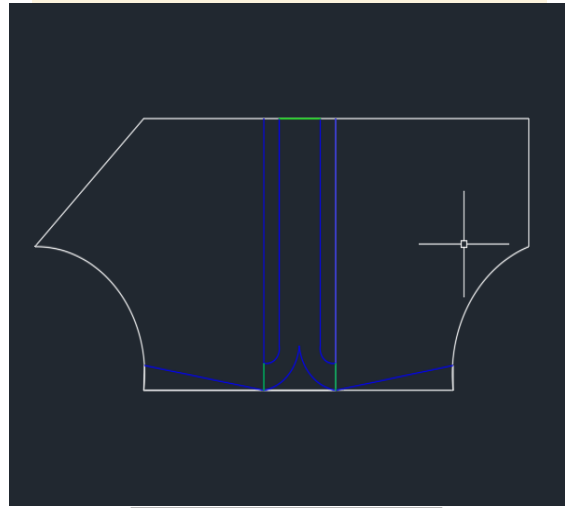


Figure 1 - Side View



Prototype Testing

Gate	Average (lbs)	Lbs/Min
Gate 1/4	8.2	16.40
Gate 1/2	15.33	30.66
Gate 3/4	21.53	43.1
Gate Open	28.60	57.2

Table 1 - Flow Rate Test

Seed	Standard (lbs/ac)	Seed Weight Capacity (lbs)	Acres
Oats	70	955.49	13.65
Rye	40	1669.83	41.75
Wheat	60	1790.17	29.84
Radishes	8	1488.67	186.08
Clover	6	1789.67	298.28

Table 2 - Volume Test

