



# Commercial potato production – making it work in the awkward [small]middle

Justin Rich, Burnt Rock Farm  
Huntington, VT, 12/14/2022

# Burnt Rock Farm:

- ~25 ac vegetables, 10 ac full season covers in 2023
- Certified organic
- 5.5" rain/mo, 1.8" lowest-ever month
- Fields along 6 miles of river valley
- Primarily local and regional wholesale, 10+ mo of deliveries

← mountains →



# Scale, other stuff we do

- 5 ac potatoes, ~10 vars
  - 45% golds
  - 20% reds
  - 15% russets
  - 10% fingerlings
  - 10% others

- 5 ac winter squash
- 4 ac sweet corn
- 2.5 ac sweetpotatoes
- 2 ac onions
- 3 ac brassicas
- 2-3 ac this and that
- Tunnels for tomatoes, etc

# Logic around scale and equipment choices:

- ~250 hrs/wk of hired labor, May-November, so need to mechanize for spring/fall especially.
- selling potatoes Aug-April. Semi-boutique-y; timeliness = yield, yield = \$,
- constant rain at times here; need to be able to roll when ground is fit
- buy equipment before we *need* it.
- would need 3-30x (?) the acreage to justify some of this stuff new. Some wrenching involved. Our rate of use is very low so equipment can last. Inflation has made this seem smarter than intended.

# Fertility Recs & goals

Potatoes: very,  
very heavy feeders

Yield target: 350+ cwt/ac

- Univ of ME recommendations for organic potato production:

120# N, 25# P<sub>2</sub>O<sub>5</sub>, 140# K<sub>2</sub>O

- Nutrient uptake by a 350cwt/ac potato crop:

200# N, 30# P<sub>2</sub>O<sub>5</sub>, 250# K<sub>2</sub>O

- N: ~250 #/ac
- P<sub>2</sub>O<sub>5</sub>: \* #/ac
- K<sub>2</sub>O: >300-350 #/ac
- Water, very regularly....

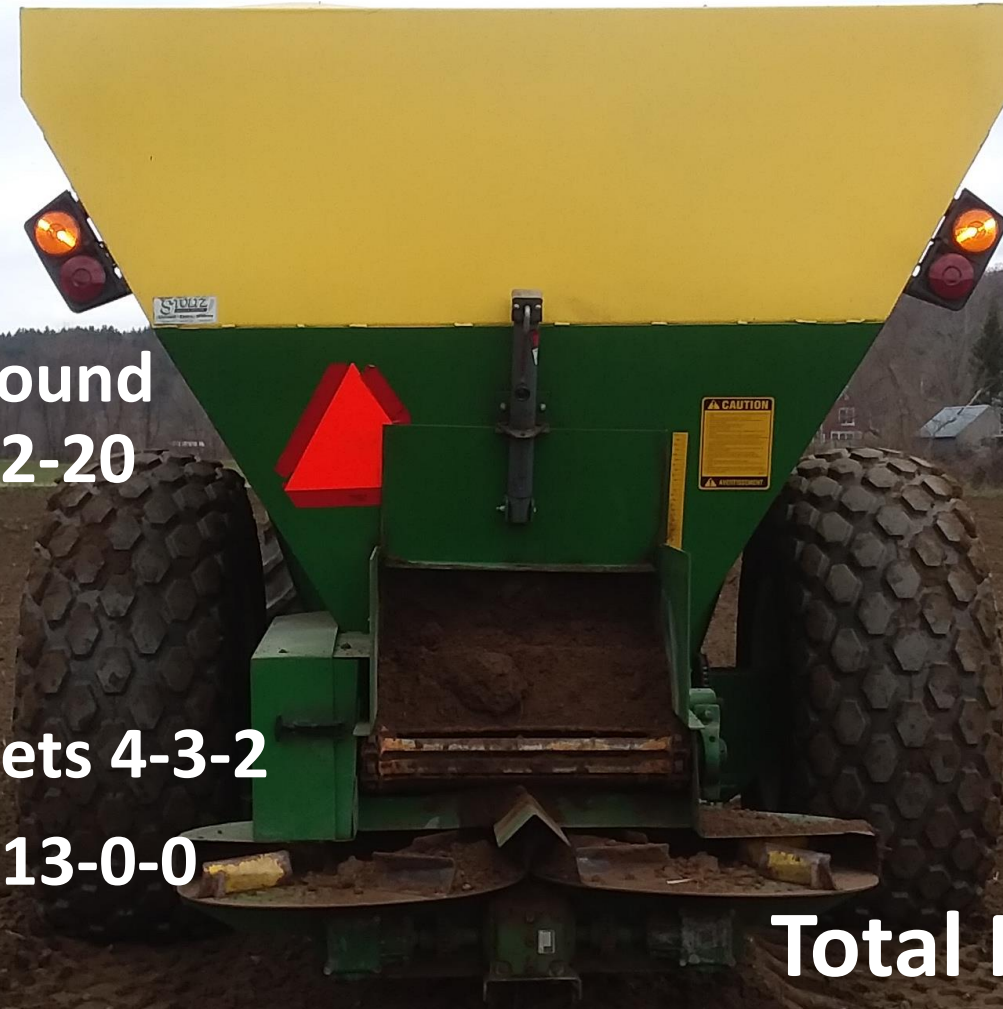
# Typical potato fertilizer program:

Long term vegetable ground with P already up to ~12-20 ppm:

- 3000#/ac chicken pellets 4-3-2
- 1000#/ac NatureSafe 13-0-0
- 400#/ac SOP 0-0-51
- 200#/ac Kmag 0-0-22

This is a *very* expensive fertility program (**\$1600/ac** in 2023)!

**Total N-P-K applied:  
250 – 90 – 310**



# Field prep:

Chisel plow ~8-9";  
disc 1<sup>st</sup> if stringy

Tandem disc and/or  
field cultivator

# Planting:

- Transplanter, w/1 driver and 2 riders = 10-12 person-hrs/ac
- Kverneland cup planter = 0.5-1 person-hr/ac

~May 8-18

36" rows, ~3 mph





# in-furrow applicator



**planter makes low ridges –  
allows relatively high planting  
relative to grade (see: rain)**



**Tine weeder  
(2-3 passes)**





2R FINGER WEEDER

Fingers

2R Fingers

oil



Finger weeders

tine weeder



New in '22:  
drip tape

Checchi & Magli  
hiller + modified  
Rain-Flo double  
drip tape  
applicator.

Scab prevention  
primary reason.  
Yield 2<sup>nd</sup>.

2 rolls of drip  
per acre =  
>\$300/ac

MARCO FABRI  
TIPO ANNO DI FABR. 2007  
MOD. Kg. MATR.

1<sup>st</sup> hilling ~30 DAP

Can irrigate 5 acres at once with a 29hp 3" pump.









**0.22gpm/100' drip = 32 gpm per acre,  
x 5 acres = 160 gpm**

**Often split in half to reduce gpm needed**

2 hillings, ~7-10d apart



# Pest/disease control

Long distance rotations + isolation keeps CPB relatively modest, spray ~1x

~1 spray for PLH; copper if weather dictates

Weekly/bi-weekly sprays of biologicals (Serenade, Regalia, seaweed, etc). Lots to improve on here.

Penn's Creek  
single-sided boom,  
400 gal, hyd fold



30' boom = 20 rows between passes







## Carlotti KMC 1600R digger:

- Small digs
- Early potatoes
- Opening fields



## Grimme 1R bunker harvester

- Narrow pitched chains
- From fingerling farm in ON
- Can hold 5-6 bins (they say 8)

Soil, weeds,  
vine removal

Stone sorting

Potato chain

Trash chain



how does  
this pay?

- Digger + hand picking: 2-2.5 person-hrs/bin
- 1-row bunker harvester: 0.25 person-hrs/bin

2 hrs/bin saved  
x 185 bins =  
300+ person-  
hrs/yr saved on  
5 acres.....

Plug in your  
farm's \$ labor  
rate.... 30% ROI  
for us.





**Road bins back to barn on wagons  
with 8-10T running gear**





2 fans,  
intake/  
exhaust

~140  
bins,  
21x26  
room





Brush washer  
with VFDs

Bin dumper

Soak tank  
w/elevator



Questions?