

Using Chickens and a Cover Crop Barrier for Weed Control in Organic Asparagus

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About Chick Farm



- Poultry farm until 1970s
- Started raising mixed veggies & eggs in 2001
- MOFGA-certified in 2002
- Two-person operation
- One acre of crops
- Added broiler production in 2007

Why Organic Asparagus?

Upside:

- High-value crop with strong market demand
- Grows well in the Northeast
- Well-suited to sandy soil

Downside:

- High start-up costs
- Weeds!

Two-Part Weed Strategy

- **For quack grass:** a tilled weed barrier surrounding the asparagus planting
- **For annual weeds:** let “weeder chickens” forage in the asparagus after harvest

Why Weeder Chickens?

- Asparagus harvested in spring (NOP manure waiting period)
- Mature asparagus stalks not palatable to chickens
- Crowns planted deep, protected from digging hens
- Chickens add fertilizer & supplement their diet

Planting the Asparagus

- Two 50' x 100' plots about 200 yards apart
- Both had been in organic crop production
- Level ground, light sandy soil
- Hybrid “Jersey Supreme” crowns spaced 15” apart and 8” deep
- Rows 4 feet apart, 80 feet long
- Buried drip tape for irrigation

Tilled Weed Barrier

- Main purpose is to keep quack grass (also known as witch grass) from migrating into asparagus
- Forms a perimeter barrier around all 4 sides of asparagus planting
- Should be at least 4 feet wide (ours was 10')
- We tried oats and winter rye as cover crops

Weeder Chickens

- Housed in “chicken tractor” (moveable coop)
- Portable electric fencing to confine chickens and keep predators out
- Chickens deployed after asparagus ferned out
- Complies with NOP manure waiting period

Setting Up the Experiment

For weeder chickens:

- Each plot divided in half lengthwise
- Chickens on one side, no chickens on the other side

For mulch comparison:

- Each plot divided in half crosswise
- Straw mulch on one half, hay mulch on the other

Planned Timeline

2009

April: plant crowns
June: apply mulch
July: deploy chickens
Sept: cover crops
Nov: cut & fertilize

2010

May: till in winter rye
May: harvest
June: renew mulch
July: deploy chickens
Sept: cover crops
Nov: cut & fertilize

So Did it Work?

Tilled Weed Barrier:

- Yes! Very effective
- Till at least twice (spring and fall)
- Can be used for annual crops
- Oats and winter rye both worked well
- Needs to be at least 4 feet wide

So Did it Work? (cont.)

Weeder Chickens:

Yes, with some caveats

- Can't use them until late the first year
- Don't let weeds get too tall
- Behavior differences among breeds
- Orientation of chicken tractor is important

Recommendations

- 8-15 chickens per 1000 sq ft, depending on age & breed of chickens & weed population
- Start with a fairly weed-free plot and manage weeds by other means during first year
- Get rid of quack grass before you plant
- The deeper the better when planting crowns
- Position chicken tractor so that chickens feel safe roaming through entire planting

Other Lessons Learned

- Delayed harvest is possible and can help extend the harvest season
- Buried drip tape didn't work well for us
- Neighborhood dogs can be a problem with portable fencing

Future Research

- Straw/hay mulch comparison
- Slower-growing broiler breeds
- Planting forage crops in pathways
- Using weeder chickens in other perennial crops, such as raspberries or grapes