

Workshop Title: Incorporating Livestock into a Market Garden or Mixed Farm

Speaker(s) & their titles: Rupert Jannasch, Ironwood Farm

Executive Summary

Rupert Jannasch shares his expertise in farming both vegetable crops and livestock to show the benefits and the detriments of using different types of livestock. Overall, Rupert recommends sheep for rotation, but includes poultry, geese and ducks, pigs, and cattle in his discussion.

Detailed Notes:

- Up until the 1950s in Germany, travelling shepherds were paid by local farmers to graze their sheep in farmers' fields, due to the fertilizing benefits of the manure for field crops.
- There has been a paradigm shift from mixed farms to crop farms or livestock farms – Rupert wishes to see the reintegration of livestock into crop farms.
- First slide – a field of oats being used as green manure, before or after a main crop of vegetables. There is of great benefit in finding ways to get livestock to consume forage crops on land that will be used for vegetables. This provides organic matter in the form of green manure (oats) and animal manure. The more a cover crop is grazed, the better the root growth of the crop, and thus the more nutrients are raised to the surface of the soil.
- Land with little erosion over the winter can be easier used in the spring.
- Pasturing livestock on land that will be used for vegetable crops eliminates much work in the form of storing and spreading compost. Sheep manure can become compacted in stables over the winter, forcing the farmer to rely on equipment to move the manure. Fuel costs and physical effort are greatly reduced when directly pasturing the animals on fallow vegetable crops. The job of moving manure is something that cannot be avoided when overwintering animals, but could be avoided in the summer when other options (ie, direct pasturing) are possible.

Composted chicken manure :

- Not a true compost.
- Offers readily available nitrogen, yes, but is not a great fertilizer because of its weed-carrying capacity.
- When applying this to soil in spring, it continues to release nutrients well into the fall and winter, releasing many weed seeds/spores as a result, and making weeding a less manageable chore.
- Is a cheap form of fertilizer that is now becoming difficult to obtain because many farmers are interested in an inexpensive fertilizer in bulk supply.

Different Examples of Livestock and How to Work Them Into A Rotation

Cattle :

- Require handling facilities to load and unload. Rupert manages spring feeders, which he looks after over the summer until their slaughter. Each cow yields about \$100 per season in grazing fees.
- Cattle do not do very well on pasture. Instead, they do well on forage that is young, with lots of digestible nutrients. Plants should be between four and twelve inches for good productivity. Cattle can receive 100% of their nutrients from pasturing, and do not require extra grain as chicken and pigs do.
- Overwintering cattle for manure incurs many handling costs, and there is still the problem of handling manure.
- There is a risk of compaction, especially when rotating pasture into vegetable crops. Buttercup growth in the springtime shows compaction.
- Rupert suggests staying clear of cattle unless your farm is already set up to handle cattle. They are too large and take too much experience to handle.
- Easier to buy cattle than it is to buy sheep.

Pigs :

- Rupert has not yet pastured pigs or put them into his vegetable rotation.
- Example of a farm where pigs were kept inside in groups, which is a good method of raising them in Ruperts opinion.
- Questions to ask if you are pasturing pigs : will they be grazers or rooters ?
 - o Pigs can be left on pasture for one or two days before they start to root.
 - o IE, pigs must be very frequently moved to be grazers. They can get up to 50% of their nutrients from pasture alone.
- John Duynisveld of Holdanca Farms, Cumberland County is a good reference for pastured pigs.
- Rooting can be beneficial in a controlled situation (eg, preparing new land, or revitalizing old land that is full of alders). However, most times farmers will run out of land that is suitable for the pigs, causing pigs to form very large mud fields that pigs can root up in as few as three days.

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- This means that pigs need careful monitoring in order to help your land's fertility, as it may also take a long time to recover from unexpected damage that pigs can cause.
- Also another important consideration with pigs : the amount of mileage that is associated with buying feed, slaughtering, and marketing the animals. This has changed in recent years, and can be a huge cost associated with all livestock.

Poultry :

- Most manageable and least intimidating farm animal. Eliot Coleman, for example, has done work on cycling poultry into a vegetable crop rotation, as has Joel Salatin. There is lots of information on the internet about best practices when it comes to pasturing poultry into a crop rotation in a vegetable operation.
- Season-oriented enterprise, especially with broilers.
- Require lots of care and attention.
- Unlike cattle or sheep (who can obtain all nutrients from forage), chickens need between 15 and 20 percent of their nutrients from grain.
- On a small scale, they can fit in very well with intensive vegetable production.

Geese and Ducks :

- Seasonal enterprise, as with chickens.
- Important to understand how they grow and the cost of feed before becoming involved with large flocks of the animals.
- As animals get older, they consume larger and larger amounts of grain.
- Important to sync the life cycle of the animals with scheduling slaughter and planning for feed.

Sheep :

- Rupert believes that sheep can do more work on his farm than cattle.
- When establishing a rotation that works for sheep and vegetable production, sheep are good because they like many types of forage (eg, kale, turnip greens, oilseed radish) that fit into a tight vegetable rotation.
- Sheep manure is of high quality, in a small-pellet form that is stable and more manageable than looser cow manure. The pellets are able to retain more nutrients with the absence of leeching due to soil contact.
- Sheep are good at evenly distributing their manure across a pasture area. (As opposed to pigs, where manure may be concentrated in one area, or with cattle, where manure is concentrated in cow patties.)
- Sheep can eat 100% forage.
- Sheep are light on their feet and cause little compaction.
- Sheep will not graze high grass, but this should be prevented by proper management. This excludes crops like turnip greens or kale, which sheep will eat.

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- Sheep can be difficult to fence, as opposed to cattle, which can be contained with a single wire at waist height. Sheep need three to five strands of electrical wire, and will need electric netting at hip height to keep sheep inside a pasture.
- In the book « Living with Worms », a biodynamic farmer in Western Ontario keeps sheep in field crops, but not with vegetables, to show a good method of keeping sheep to fertilize crop land.

Horses :

- Poor grazers, they eat short grass and keep it short.
- High compaction rate.

Organic Standards :

- After incorporation of manure, in warm weather, a farmer must wait 120 days to harvest vegetables that are in direct contact with the soil (this is to prevent E.coli in vegetable crops). There is also a count of 90 days and a count of 60 days, depending on how much of the vegetable plant is touching the soil.
- Counting of days starts when warm weather begins. Eg, if you pasture your animals in the fall, you must begin the count of days for the next season, in the spring-time.

Audience Comments :

- Cattle are much less likely to break out of their pens if they have a structured routine. Cattle can smell if a fence isn't working, and are likely to break out if they are moved often.