



## RESEARCH PROTOCOLS

### Sheep Grazing Cover Crops to Improve Zucchini Yield

**Objective:** Determine if grazing sheep on annual summer forages (cover crop in vegetable field) during trial year 1 (2019) will have an effect on 1) lamb weight gain compared to lambs grazed on perennial pasture and 2) zucchini yield in trial year 2 (2020) following the grazed and un-grazed cover crop.

**Hypothesis:** The integration of sheep grazing into cover-cropped vegetable fields will improve lamb weight gain in year 1 and zucchini yield in year 2.

#### **Farmer-Cooperator will:**

- Take photos throughout the project

#### **July 2019 (after garlic harvest):**

- Plant a summer annual cover crop mix in 230' x 48' vegetable field. The mix could include: sorghum-sundangrass, BMR grazing corn, cow-peas and berseem or alyce clover.
- Lay out plots for trial.
- Set up fencing to graze treatment plots. Establish a fenced-in alley for moving lambs to each treatment plot; keep fenced throughout entire grazing period.

#### **August 2019:**

- Just prior to grazing cover crops, weigh lambs individually and record each weight with ear tag number.
- Split lambs into two groups. Try to keep each group as even as possible (same number of ewes and rams, similar weights).
- Graze cover crop treatment plots with one group of lambs, while the other group grazes on pasture. Record date cover crop grazing begins. (Do not graze control plots.)
- Weigh individual lambs from both groups just after cover crop grazing has finished.
- Record date cover crop grazing ends.

#### **Fall 2019**

- Manage cover crop as desired, but keep plots identifiable for the following season!

### Spring-Summer 2020

- Take soil samples for fertility (N, P). You should submit 6 bags for analysis). Take soil cores to a 6-inch depth in each plot and aggregate the cores in the plot's bag to provide a representative soil sample that fills the bag to the "fill to this line" line. LABEL BAGS CLEARLY. Mail samples to PFI.
- Plant zucchini the follow growing season – ensure plots are still identifiable for harvest.
- Record planting and production data as listed in the excel workbook.
- Harvest zucchini and record yield (marketable count and plot weight) data from each plot, as per the provided excel workbook.
- Turn in all data by October 2020, or as soon as possible following harvest.

Rep 1		Rep 2		Rep 3	
Cover	Cover + Graze	Cover	Cover + Graze	Cover + Graze	Cover
Establish fenced-in alley for moving lambs from treatment plot to treatment plot					

### Practical Farmers of Iowa will:

- Help set up research protocol.
- Monitor progress of project and provide support when needed.
- Publish results in a PFI research report, on PFI website, and potentially other outlets.
- Provide \$550 cooperator payment at conclusion of project year.

**Contact:** Liz Kolbe, Horticulture and Habitat Programs Manager, (515) 232-5661; [liz@practicalfarmers.org](mailto:liz@practicalfarmers.org)