Farmer Profile – A

**Jerry Kusack** is a farmer in north-central Iowa. His Hardin County farm is primarily in the Tama soil series, and is about 4% slope at a length of 150 feet. He has 600 acres that he farms in a corn and soybean rotation. He currently uses a chisel plow for tillage, and leaves 40% cover after planting, but he is looking for ways to increase his soil conservation. Jerry does not own livestock, or utilize other conservation practices.

Jerry is excited about conserving more soil, but he is concerned about cost of seed, and having time to terminate the crop in the spring.

Jerry should use \_\_**winter wheat or triticale** \_\_ as his cover crop.

He will seed it using \_\_**narrow row planting, broadcast seeding, or broadcast seeding with incorporation**\_\_.

He will terminate it using \_**herbicides or tillage** \_\_.

This system is good for Jerry’s operation, because:

**Jerry would not want to use rye, because it is harder to manage in the spring. He would also not want to use radishes, because they are the most expensive. (Radishes could be argued if a case is made that spring termination is not necessary for them.) He would also probably not want turnips, as they are relatively expensive, and would require termination in the spring. However, winter wheat and triticale are easier to manage in the spring, and are a moderate price.**

**Jerry does till his field, so planting or incorporating seed would be fine in his system. The two cereal grains are also easily established if they are not incorporated, so broadcast seeding is also acceptable.**

**Jerry might terminate his crops using herbicides or tillage. Again, since he does regularly use a chisel plow in his operation, this would be an easy step. Herbicides are also commonly used, and would be relatively affordable, especially compared to the cost of purchasing new equipment. Jerry would not graze, as he does not have livestock, and would not simply use winter, as the cereal grains survive winter.**

Farmer Profile – B

**Jessica Ravens** is a farmer in southeast Iowa. Her Wapello County farm is primarily in the Gara soil series, and has slopes of 15% at lengths of 300 feet. She farms about 300 acres, 200 of which she keeps in a four-year crop rotation of corn, soybeans, oats, and alfalfa. She currently uses a no-till system with 50% cover after planting. Jessica does run a cattle herd, and has a few goats. She also uses terraces with grassed waterways.

Jessica knows the importance of conserving soil on the steep slopes of her farm, but is concerned about compaction, as well as cost to implement cover crops.

Jessica should use \_**cereal rye, turnips, or radishes**\_ as her cover crop.

She will seed it using \_**no-till drilling or broadcast seeding on surface**\_\_.

She will terminate it using \_**herbicides, grazing, or winter**\_\_.

This system is good for Jessica’s operation, because:

**Many crops can be argued in Jessica’s operation, since she is concerned mainly about compaction and cost. The two crops that would most alleviate compaction are turnips and radishes, which are also the two most expensive. However, one of the benefits of any cover crop is that it adds different root structures to the soil, helping alleviate compaction to some extent. The brassicas do also hold a nutritional value that could be beneficial for Jessica’s livestock, and the radishes would not require spring termination. These factors would reduce overall cost or provide a benefit for Jessica.**

**Since Jessica’s operation is no-till, she would either need to drill, broadcast, or aerial seed. Since aerial seeing using a plane is the most expensive option, one might assume she would not want that option.**

**Jessica may terminate her cover crops using herbicides, grazing, or winter, depending on the crop she chooses. Grazing may be the most plausible, considering her cattle and goat herd. However, radishes would not survive winter, and other cereal grains may require herbicide treatment. Jessica would not till under her field, and most likely would not roll or crimp, as that may require extra cost for equipment.**

Farmer Profile – C

**Scott Martinez** is a farmer in western Iowa. His Crawford County farm is primarily in the Monona soil series, with about an 8% slope at a length of 100 feet. He farms about 400 acres in a five-year rotation of corn, soybeans, corn, oats, and alfalfa. Currently, he is not tilling his fields, and they have about 70% cover after planting. Scott does not have livestock he grazes, but he does cut hay to use for his small sheep herd, as well as to sell to neighbors. He also uses contour planting as a conservation method.

Scott is happy with his current crop rotation, but is concerned about soil health. He wants to add more organic matter to the soil, as well as keep nutrients in it for his regular season crops.

Scott should use \_**cereal rye, winter wheat, or triticale**\_ as his cover crop.

He will seed it using \_**no-till drilling, broadcast on surface, or aerial seeding**\_.

He will terminate it using \_**herbicides or rolling/crimping**\_\_.

This system is good for Scott’s operation, because:

**Scott’s main concerns don’t hugely lend themselves to one crop over another. However, we do know that he does not graze animals, but does cut hay. Since brassicas are not generally used as hay crops, one of the cereal grains may be a better option for him. However, if a student argues that a brassica would offer more organic matter beneath the soil surface and that he hasn’t shown concern about cost of the cover crop, either turnips or radishes would also be acceptable.**

**Since Scott does not till, his options for seeding would be limited to no-till drilling, broadcast on surface, or aerial seeding. Since he has not expressed concern over cost, any of these options would be viable choices.**

**To terminate his cover crop, Scott might use herbicides or roll/crimp his crops. If he would cut his cover crop as hay, he still may need to spray the remaining plant with a herbicide to ensure it is terminated. Again, since he hasn’t specified a cost concern, purchasing a roller/crimper may be something he is interested in.**

Farmer Profile – D

**Samantha Jones** is a farmer in northeast Iowa. Her Delaware County farm has soils in the Floyd soil series, with a 2% slope at a length of 200 feet. Samantha farms about 250 acres in a two-year crop rotation of corn and soybeans. She currently uses a chisel plow for tillage, and leaves 20% cover after planting. Samantha does not own livestock, or use other conservation practices.

Even though Samantha’s land is not on a steep slope, she is concerned with conserving as much soil as possible. She is also concerned about adding nutrients to the soil, and improving soil health.

Samantha should use \_**cereal rye, winter wheat, or triticale**\_ as her cover crop.

She will seed it using \_**narrow row planting, broadcast seeding (either), or aerial seeding**\_.

She will terminate it using \_**herbicides, tillage, or rolling/crimping**\_.

This system is good for Samantha’s operation, because:

**Samantha expressed interest especially in conserving as much soil as possible. We know that cereal grains tend to conserve more soil than brassicas, so these may be the best options. It is also stated in the winter wheat description that it is good at retaining soil nutrients. Therefore, winter wheat may be the best option for Samantha, but other cereal grains would also be acceptable.**

**Samantha may seed her crops using a narrow row planter, since this is equipment that she probably owns, and it would work well on her chisel plowed fields. She could also broadcast seed with or without incorporation; with incorporation, she would have a higher percentage of seeds become established, but without, she would avoid extra tillage. Since Samantha did not note a concern for cost, she also may consider aerial seeding.**

**Samantha may terminate her crops using herbicide, tillage, or rolling/crimping. Since she does not have livestock, she will not graze her crops, and since she will most likely use a cereal grain, she will not be able to use winter as termination. Any of the other termination options would be fair options for Samantha.**