**L & B Farm**

Owner: Lisa Capp, Daulphin County

Owned and operated by Lisa Capp, L & B Farm provides horse boarding, lessons, trail rides and children’s summer camps in Dauphin County. The operation is located on approximately 30 acres of pasture and is home to 40 horses. Lisa became interested and involved in the on-farm Equine Stewardship Project through attending Penn State’s Equine Environmental Stewardship Short Course.

**Best Management Practice (BMP) Identified:**

Increase vegetation that provides nutrition for horses, and reduce weed populations in pastures.

**Reason for BMP:**

Most pastures on the farm had sufficient vegetative cover to prevent soil and nutrient loss during the growing season. The majority of the canopy cover, however, consisted of annual weeds and grasses such as foxtail and crabgrass. Annual grasses and weeds are killed by a hard frost in fall which increases the chance of erosion in fall, winter, and early spring. A dense cover of perennial plants can reduce soil and nutrient losses from pastures throughout the year. Pastures that contain perennial grasses and legumes can provide high quality nutrition and help reduce hay and feed costs.

**Course of Action:**

* **Date Reseeded:** October 2011; reseeded again September 3, 2012
* **Equipment Used:** Prior to seeding, a disk and cultipacker were used to loosen soil and prepare s firm seed-bed. A no–till drill was used to place seed into the ground.
* **Seed Mix:** Endophyte free tall fescue, tekapo orchardgrass, festulolium, Kentucky Bluegrass, white clover
* **Soil Tested:** Yes
* **Fertilizer:** 50 lbs. of nitrogen was applied in April 2012
* **Lime:** No (None Recommended)
* **Other:** Pastures were seeded using a no-till drill in October 2011. Since most of the annual weeds were killed by a hard frost, no  herbicides were used in 2011 to control weeds. New grasses should emerge in fall and have sufficient growth to compete with annual weeds emerging from seed the following spring. It was noted that continuous weed pressure from perennial plants may necessitate applying an herbicide the following year.

**Results:**

| **2011 Seeding** | **Before Renovating Pasture** | **After Renovating Pasture** |
| --- | --- | --- |
| Canopy Cover |                   80% |                  82% |
| Desirable Forage |                   24% |                  22% |
| Perennial Plant |                   38% |                  54% |

The reseeded pasture was reevaluated in August of 2012. The pasture showed very little improvement in desirable plants and permanent vegetation after the pasture was seeded. The canopy cover was 80% prior to seeding in October 2011 and was 82% in August 2012. Only 38% of the vegetation consisted of perennial plants prior to reseeding and improved slightly to 54% after reseeding.  There is not enough permanent cover to sufficiently reduce sediment loss in late and winter. There was also no improvement in the density of desirable plants that can provide high quality nutrition for horses.  Only 24% of plants had nutritional value prior to reseeding and 22% had forage value in August 2012.

The low reseeding success rate was due to multiple factors: late fall seeding, high weed pressure, and excessive fall rains. Southeastern Pa was drenched with heavy rain form Hurricane Irene and Tropical Storm Lee during the fall of 2011. When the pasture was evaluated in summer of 2012, there were no rows of new grass seedlings, indicating that the heavy rains transported the seeds and shallow rooted seedlings from the flooded pastures. ( A pasture that was reseeded using a no-till drill will contain obvious rows of new grass plants.)

The pasture was reseeded again in August 2012.  Early planting is desirable and provides more time for new seedlings to establish before winter. However the annual grass populations of crabgrass, foxtail and panicum were very high in the pastures. Prior to reseeding, Round-Up was applied to control and kill weeds and annual grasses that could compete with and suppress the emerging young seedlings. The pasture was then minimally worked to alleviate compaction and seeded with the same seeding mix using a no-till drill.

The pasture was  re-evaluated in June 2013.

|  |  |  |
| --- | --- | --- |
| **2012 Seeding** | **Before Renovating Pasture**  | **2013 After Renovating Pasture** |
| Canopy Cover |                   82% |  94% |
| Desirable Forage |                   22% |  89% |
| Perennial Plant |                   54% |  100% |

The pasture showed significant improvement after being seeded in 2012. Due to the density of forage species, the pasture was mowed and baled in May. The pasture was allowed to regrow and the horses began lightly grazing the pastures in late June. Desirable plants greatly improved, increasing from 22% to 89%.  The vegetation consisted of Fetololium (30%), tall fescue (17%), Orchardgrass (15%) forage fescue (13%), white clover (9%) and Kentucky Bluegrass (5%).  Tall fescue (K31) was not included in the mix and developed from residual seeds that were in the soil. Canopy cover increased from 82% to 94% with 100% of those plants being perennial plants that can provide beneficial erosion control year round.

**Challenges**

L & B Farm has a high animal density rate, making it difficult and nearly impossible to graze horses for long periods of time without lowering pasture quality. Over grazing prevents growth of forage species, can eliminate forages form the stand and contributes to higher weed germination. Buttercups and Broad Leaf and Curly Dock are weeds that are a management problem on the farm. In order to maintain pasture quality and vegetation, Lisa installed a sacrifice lot, or heavy use area. The sacrifice lot allows Lisa to turn out horses when pastures need rest from grazing, or pasture conditions are not conducive to forage growth.

**On – Going Management and Additional Best Management Practices (BMPs):**

Continuing to improve pastures through:

* Reducing grazing hours on pastures
* Mowing to reduce weed pressure

[L & B Farm](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/Picture%201.JPG/view)

[Pasture before renovating](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/Picture%202.JPG/view)

[Annual weed grasses](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/Picture%203.JPG/view)

[Curly Dock](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/Picture%204.JPG/view)

[Applying Round -Up](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/Picture%205.JPG/view)

[Pre- Planting](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/Picture%206.bmp/view)

[No- Till Drill](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/Picture%207.jpg/view)

[Emerging seedlings](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/Picture%208.bmp/view)

[Heavy Use Area](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/heavy-use-area/view)

[Outdoor Hay Feeder](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/outdoor-hay-feeder/view)

[Automatic Waterer](http://extension.psu.edu/animals/equine/farm-partners/l-b-farm/automatic-waterer/view)