Organic Dairy Pastures

Yoana Newman, University of Wisconsin-River Falls

The Midwest is a geographical area favored by adequate rainfall where temperate pasture plants of high-quality and digestibility dominate. Pastures for dairy production require high-producing and high-quality forages because of the above-normal nutritional needs demanded by dairy cattle. To achieve and maintain the quality and quantity of forages, whether conventional or organic, species selection and grazing management are key and powerful tools. Organic pasture farmers, in addition to using these resources, have to comply with the National Organic Program (NOP) Pasture Rule in order to maintain certification. Compliance to the Pasture Rule means animals must graze pasture during the growing season, have year-round access to outdoors, and roughages used for bedding need to be certified organic. In the end, organic dairy pastures and grazing management will provide a pasture-based product that is in growing demand.

What species make for a good dairy pasture? A good forage resource will include a mixture of adapted forage species while taking advantage of non-traditional resources. The options include several perennial and annual cool-season grasses, forbs, and palatable weeds. Let's review briefly the main characteristics of these species.

Figure 1. Bromegrass and clover mixes make for high-quality forage in dairy pastures. Early May at an organic grazing dairy near Chetek, WI. *(Photos: Yoana Newman, UWRF)*

- **Perennial and annual ryegrass** – these bunch grasses are top ranking among cool-season grasses for digestible fiber, making them an excellent dairy pasture choice. Long-term use has been limited by low winterhardiness but improved varieties are entering the market.
- **Smooth bromegrass** – a perennial winterhardy, high-yielding grass adapted to well-drained soils and is drought and heat tolerant.
- **Orchardgrass** – a perennial bunch grass adapted to a wide range of soils with good moisture. Aggressive and used in intensive frequent grazing; susceptible to close grazing.
- **Meadow fescue** – superior palatability. Well-adapted to the driftless region of southwestern Wisconsin, northwestern Illinois, northeastern Iowa, and southeastern Minnesota, where it has survived for over 100 years.
- **Festulolium** – a hybrid cross between ryegrasses and fescues combining the high-quality and palatability from ryegrasses with the environmental stress tolerances provided by fescues, without harmful effects from fungi present in tall fescue. Varieties have been developed to survive the harsh winter conditions of Wisconsin.
- **Tall fescue** – a high-yielding, perennial cool-season grass with greatest yields in mid-summer and fall; not winterhardy. When mixed with clovers, performance tends to be similar to orchardgrass.
- **Forage brassicas (chicory, rape, turnip)** – gaining in popularity in mixtures because of their fast growth and large taproot, contributing to soil aeration. In the case of perennials like chicory, they will continue to regrow for some years.
- **Forage legumes** – a diverse range of perennial, cool-season legumes to use in mixtures including alfalfa, red clover, white clover, alsike clover, Kura clover, and birdsfoot trefoil. Red clover is adapted to a wide range of soils, including slightly acidic soil (pH= 5.5). Both white and Kura clover have very good grazing tolerance. White clover is adapted to moist areas. Kura clover is very winterhardy.
- **Palatable weeds** – species like dandelions and quackgrass, regarded as perennial weeds, are palatable and will prove to be a reliable resource during critical conditions such as drought.

Figure 2. Dandelions (*Taraxacum officinale*) and quackgrass (*Agropyron repens*), both perennial weeds, are a valuable resource in pastures and palatable to livestock.

What grazing management tools are needed? To master grazing principles is to manage pastures as crops. Main grazing management tools are intensity and frequency.

Figure 3. Grazing management using conservative stubble heights provides quick spring regrowth and happy dairy farmers! Early May in an organic pasture near Chetek, WI.

- **Grazing intensity** – refers to how short to graze your pasture. It is the most important factor in grazing management because of its long-term implications in pasture recovery. Grazing to conservative stubbles provides quick spring regrowth and recovery after grazing. Stubble height is species dependent. For example, taller bunch grasses like orchardgrass or tall fescue will require a taller stubble height compared to short sods like Kentucky bluegrass. Taller-growing sod types like bromegrass or reed-canarygrass will also benefit from tall grazing stubble. Forage species relying on underground rhizomes like Kura, white clover, or Kentucky bluegrass, will tend to have more tolerance of close grazing.
- **Grazing frequency** – refers to how soon or how long a pasture is utilized. Early use for prolonged periods tends to be deleterious for most forages.