

A photograph of a herd of brown cows in a field at dusk. The cows are the central focus, with some looking towards the camera and others grazing. The background shows a line of trees under a dark, twilight sky. The overall tone is dark and moody.

Crop Rotation U.P.- Style

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U.P. Crop Rotation Factors

➤ **Intended use of crop**

- Livestock feed
- Cash crop
- Soil improvement - green manure/cover crop

➤ **Soil type**

- Well-medium drained (central U.P.)
- Poorly drained (east and west U.P. areas)

➤ **Weather / Microclimate patterns**

- Snow cover
- Heat units

Eastern U.P.

➤ **Main crops**

- Hay – primarily timothy & clover/bft for sale or orchardgrass, brome, bluegrass & clover/bft for livestock
- Small acreages of small grains (oats – mostly as nurse crop, barley, wheat, rye)
- Small acreages of alfalfa, corn, flax on better drained soils
- **Planting dates** – late May/early June
- **Harvest dates** – Single cut hay, July – early Aug

Eastern U.P. Rotations

- **Hay farmers (10 year rotation)**
 - Oats with timothy/clover/bft seeding
 - 8 years hay
 - Barley, wheat or rye for grain
- **Livestock farmers (10 year rotation)**
 - Oats (for silage) with orchardgrass, brome, bluegrass, timothy/clover/bft seeding
 - 9 years hay and/or grazing

Western U.P.

➤ Main Crops

- Hay – primarily grass and clover/bft for on-farm livestock feed or local sale
- Small acreages of small grains
- Small acreages of corn silage

➤ Planting Dates

- Early – late May

➤ Harvest Dates

- Single cut – early July to early August
- Two cut – 1st cut: 2nd-3rd week July
-- 2nd cut: early Aug

➤ Soils

- Low fertility, poorly drained clay soils

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Western U.P. Rotations

- **Long Rotations** similar to eastern U.P.
 - Differences include more soil variability, less flat terrain, little hay exported
- Grass/clover/trefoil stands occasionally broken by small grains w/seeding
- Some winter wheat, field peas and corn silage

Central U.P.

- **Main crops**
 - Hay – alfalfa, grass, grass/legume
 - Small grains – barley, oats, wheat
 - Corn – silage or high moisture grain
 - Others - Potatoes, dry beans, soybeans
- **Planting dates** – late April through May
 - Oats – potatoes – barley – corn – alfalfa
- **Harvest** through October
- **Soils** typically well-drained, variable pH

Central U.P. Rotations

- **Dairy/Livestock Farms (7 year rotation)**
 - Barley w/alfalfa seeding – 1 year
 - Alfalfa – 4-5 years
 - Corn – 1 year
- **Other dairy livestock farms**
 - Long pasture/hay rotation occasionally broken with small grain/seeding or corn silage
- **Potatoes, dry beans, etc.**
 - Typically longer crop rotations than in lower Michigan production areas
 - Some soil conditioning crops including fall rye, sorghum sudangrass, etc.

Crop Rotation: *Options to Consider...*

- Addition of new, annual feed or cash crops to increase rotation diversity:
 - Field peas
 - Planted 5/18, harvested 8/06 (1 week before oats) at Chatham
 - 2007 trial results at Chatham – avg 32 bu/a
 - Winter wheat
 - Planted 9/20, harvested 8/12 at Chatham
 - 2008 trial results at Chatham – avg 63 bu/a
 - Spring wheat
 - Planted 5/12, harvested 8/25 at Chatham
 - 2008 trial results at Chatham – avg 39 bu/a

Crop Rotation: *Options to Consider...*

- Insertion of cover/green manure crops where conditions and economics allow:
 - Fall rye
 - Red clover
 - Sorghum sudan
 - Field peas
 - Winter wheat
 - Others?

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Benefits of cover/conditioner crops

- Provide nitrogen
- Add organic matter
- Improve soil structure
- Reduce soil erosion
- Provide weed control
- Manage nutrients
- Furnish moisture-conserving mulch

Example on clay ground

- Break up old hay in fall/spring
- Seed sorghum/sudan ~July 1
- Harvest for feed
- 2X ?
- Summer seed timothy/clover/trefoil

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Example on well-drained ground

- Take summer hay off old grass/legume field
- Spray, work up (or no-till), sow winter wheat
- Frost seed red clover in spring
- Harvest wheat, utilize clover if needed
- Spray, work up (or no-till), sow corn
- If taken off in September, spin on fall rye seed for winter cover crop
- Spray in spring, sow small grain/seeding



Thank You!

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