

PA- Supplemental Guidance

2011-1

SQL-08 Intercropping to improve soil quality and increase biodiversity.

Intercropping is growing two or more species on the same land at the same time. The practice of intercropping may be simple or very complex for a producer to manage depending on the objectives. The guidance provided by the jobsheet is minimal. Penn State does not have a single location where intercropping techniques are described. This guidance provides examples of each type of intercropping listed in the jobsheet that have been practiced in PA.

Refer to Agronomy Facts 67 Management of Red Clover as a Cover Crop for recommended intercropping techniques for establishing red clover (<http://cropsoil.psu.edu/extension/facts/agfact67.pdf>). The red clover may be used as a forage crop.

Mixed inter-cropping – growing two or more crops together in no distinct row arrangement. The component crops are totally mixed in the available space.

- Example: When seeding alfalfa, a mixture of peas and triticale is sown simultaneously. The “Pea-Cal” mix will produce a crop that can be harvested for silage or direct feed. Careful attention to seeding rate and harvest timing is required.
- Example Establish red clover by seeding it together with oats in March or April. In this case, using 6 to 10 pounds of seed per acre is recommended. In this scenario, put the red clover seed in the small seed box on the drill and dribble the seed behind the double disk openers so it is not placed too deep.

Relay inter-cropping - involves seeding one crop before the first crop has been harvested.

- Example: frost-seed red clover into standing winter wheat or barley from February to April. With this method, the red clover seed is simply broadcast on the soil surface using a spreader. Make sure the seed is spread evenly across the field. An effective method of frost- seeding red clover is to mix the inoculated red clover seed with liquid nitrogen fertilizer and top-dress the mix onto winter small grains in March or early April.

Row inter-cropping – *Row intercropping*—growing two or more crops at the same time with at least one crop planted in rows.

- Example one: planting corn and sorghum in the same field (using corn hopper for corn seed and herbicide hopper for sorghum seed) and harvesting all for silage. This is an effective technique when producing silage on droughty soils;
- Example: Red clover can be broadcast into corn or soybeans starting around the second half of June. Interseeding red clover earlier could result in main crop yield penalties due to competition of the red clover. Some farmers broadcast the red clover seed into corn or soybeans prior to last cultivation for weed control, thus improving red clover seed-to-soil contact. Red clover can also simply be broadcast in corn or soybeans without cultivation.

Be aware, atrazine or other residual herbicide programs may preclude successful establishment of red clover this way.

- Example: Use Roundup Ready corn or soybeans as long as the herbicide program for those crops is limited to herbicides without much residual activity (such as glyphosate or 2,4-D). The seed can be flown on with an airplane or helicopter, or can be broadcast by driving a spreader through the field. Broadcasting red clover seed into soybeans just before leaf fall (when soybean leaves start to turn yellow) has been proven a successful method. The leaves that fall after the red clover seed has been broadcast help increase humidity around the seeds
- Example two: inter-seeding a living-mulch, an annual or perennial plant, with a grain crop or planting a grain crop into an existing perennial grass or legume crop. This technique will require suppression of the living mulch and may present significant management challenges to avoid competition between species.

Strip intercropping - Not common in PA.—growing two or more crops together in strips just wide enough to permit separate crop production using machines but close enough for the crops to interact. Careful management is required to avoid undesired competition among species.

System/acre

Amount Applicable = Cropland acres

Not applicable on adjacent land

Not compatible with: ANM21, ANM22, ANM23,
SOE02
SQL06