

Cover Crop Options for Fruit Orchards

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Cover Crops Defined



- A cover crop is not harvested for profit, but rather is included in the farm or garden to provide *one or more ecosystem services*.
- Cover crops can reduce fertilizer and pesticide inputs, attract pollinators, increase biodiversity and improve *soil health*.

National Cover Crop Initiative

“Cover crops to me are just the next natural step in trying to have a broader system, and I think the single biggest issue we have as farmers in this country is we don’t farm with a system in mind.”

- panelist Howard G. Buffett, a philanthropist and Illinois farmer.



National Cover Crop Conference 2014, Omaha, NE

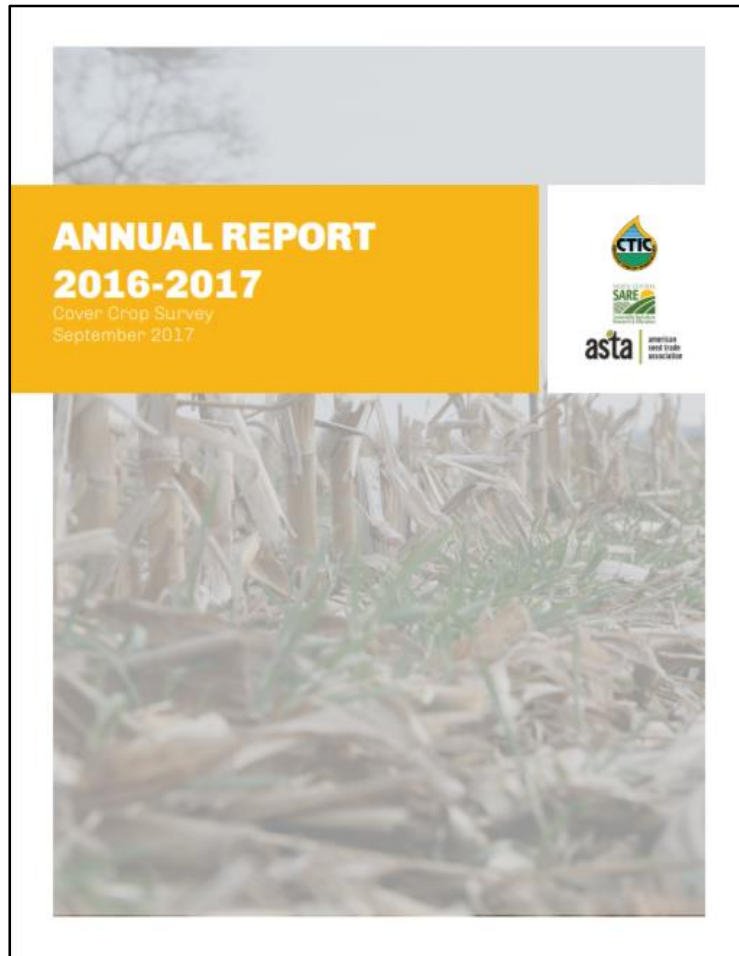
National Cover Crop Initiative

**20 Million Acres in
Cover Crops by 2020**



- Improved access to technical support and equipment
- Recognizing innovative farmers
- Develop educational materials and consistent messaging
- Increase research
- Align program requirements among farmer agencies (NRCS, RMA, etc.)

National Cover Crop Survey



- 2,102 farmers participated.
- 80% produced row crops, 20% produced specialty crops
- 86% of respondents cited soil health was a key benefit of cover crops; 54% believed that those benefits began in the first year of use.
- 66% reported weed control was improved following cereal rye cover crop
- Non-users cited technical assistance, incentive programs, and more knowledge to influence adoption.

Adding Cover Crops to Your System

1. Choose your objective.



Adding Cover Crops to Your System

2. Consider your equipment.



Adding Cover Crops to Your System

3. What time of year will covers help most?



Adding Cover Crops to Your System

4. Create a short list of cover crop species



Cover Crop Establishment



- Time and labor required for planting and establishment is a primary barrier to cover crop adoption.
- Fertilizer and irrigation to establishment are necessary. Typically, nitrogen rate = 40 lbs/a
- Legumes should be inoculated.

Managing Cover Crops



- Orchard mowers will likely not be able to manage the amount of biomass generated by covers.
- If cover crop establishment fails, be prepared to implement a Plan B.
- Use seasonal temperature changes to your advantage
- Scout your covers as you would your crop.

Terminating Cover Crops



MOW. Flail mowers deposit material directly under the deck; rotary mowers (Bush Hog) throw plant material unevenly outside of deck.

SOIL INCORPORATE. May be difficult with a lot of residue. May require several passes.

ROLL/CRIMP. Equipment highly customizable. Regrowth is possible if plants are not fully terminated. Timing of termination VIP.

Warm Season Cover Crops

COMMON NAME	LATIN NAME	CULTIVARS
Sunn hemp	<i>Crotalaria juncea</i>	'Tropic Sun'
Cowpea	<i>Vigna unguiculata</i>	'Iron Clay'
Lablab	<i>Lablab purpureus</i>	
Pearl millet	<i>Pennisetum glaucum</i>	'Tiff' series
Sorghum Sudangrass	<i>S. bicolor</i> x <i>S. sudanense</i>	
Buckwheat	<i>Fagopyrum esculentum</i>	'Manor'
Sesame	<i>Sesamum indicum</i>	Various lines
Sunflower	<i>Helianthus annuus</i>	'Mammoth'

Cool Season Cover Crops

COMMON NAME	LATIN NAME	CULTIVARS
Crimson clover	<i>Trifolium incarnatum</i>	'Dixie'
Alyce clover	<i>Alysicarpus ovalifolius</i>	
Austrian winter pea	<i>Pisum sativum</i> spp. <i>Arvense</i>	'Frost'
Daikon radish	<i>Raphanus sativus</i>	
Triticale	<i>Triticum aestivum</i> X <i>triticosacale</i>	
Cereal rye	<i>Secale cereale</i>	'FL 401' 'Wrens Abruzzi'

Cover Crop Management Plan

- January: Breaking dormancy, first bloom, leaves emerge
 - COVER CROP TERMINATION
- February: Full bloom
- March: Petal fall, fruit cell division, full canopy
- April: Vegetative and fruit growth, first mature fruit
- May: Fruit matures/harvest
- June: Final harvest
- July: Summer prune
 - PLANT COVER CROP ROTATION #1
- August-November: Vegetative growth
 - TERMINATE FIRST COVER CROP
 - PLANT COVER CROP ROTATION #2
- December: Defoliation, dormancy, winter prune



Thank you!

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