

# Mustard Greens

Dr. Joe Masabni  
 Department of Horticulture  
 Texas AgriLife Extension Service

## Varieties

Early Mizuna, Florida Broadleaf, Green Wave, Large Smooth Leaf, Savanna, Southern Giant Curled, Tendergreen

## Soil Preferences

Deep, friable, sandy loam with pH 5.5-7.5; will tolerate wide range of soil types with proper management. Avoid excessively heavy soils that can cause root malformation.

## Optimum Growing Conditions

Cool season crop with tolerance to frost and light freezes. Temperature above 75°F for prolonged periods can slow growth and reduce quality.

## Establishment Methods

<b>Planting Method</b>	Direct seeded
<b>Optimum Time</b>	Spring - seed zone temperature >40°F Fall - seed zone temperature <105°F
<b>Seeding rate</b>	3-4 lbs/acre
<b>Approx seed/oz</b>	15,000
<b>Seeding depth</b>	1/4-1/2"
<b>Seedling spacing</b>	Double plant rows on 38-40" raised beds with 4-6" in-row spacing

## Fertility/Fertilization

Rates presented as actual lbs/acre N<sub>2</sub>, P<sub>2</sub>O<sub>5</sub>, and K<sub>2</sub>O (base actual rates applied on soil test results).

Generalized rate: 50 - 70- 100 lb/acre	
<b>N*</b>	35-80; 25-40 lbs pre-plant + 10-40 lbs side-dressed 25 days after planting
<b>P</b>	50-120 banded 2" below seed at planting
<b>K</b>	70-120 applied pre-plant with the nitrogen (normally only required in east Texas)

\* Ammonium nitrate is very stable and least likely to evaporate. Urea and ammonium sulfate evaporate if not incorporated.

**Water/Irrigation**

10 - 15" uniformly available throughout growing season.

**Pest Management**

**Mustard Green Diseases and Common Name of Fungicidal Controls**

DISEASE	FUNGICIDE*	OMRI LISTED FUNGICIDE**
Leaf spot		Neem Oil
Downy mildew	Acibenzolar-S-Methyl, Copper Sulfate, Dimethomorph, Fenamidone, Mandpropamid, Mefenoxam, Fosetyl-Al, Potassium Phosphite, Pyraclostrobin	<i>Bacillus pumilus</i> , <i>Bacillus subtilis</i> , Copper Hydroxide, Cuprous Oxide, Extract of <i>Reynoutria sachalinensis</i> , Neem Oil, Potassium Bicarbonate, <i>Streptomyces lydicus</i>

**Mustard Green Insect Pests and Common Name of Insecticidal Controls**

INSECT	INSECTICIDE*	OMRI LISTED INSECTICIDE**
Aphid	Acetamiprid, Bifenthrin, Cypermethrin, Dimethoate, Endosulfan, Imidacloprid, Malathion, Petroleum Oil, Piperonyl Butoxide, Potassium Salts of Fatty Acids, Thiamethoxam, Zeta-Cypermethrin	Azadirachtin, Neem Oil, Peppermint and Rosemary Oil, Pyrethrins
Armyworms	Beta-Cyfluthrin, Bifenthrin, Carbaryl, Chlorantraniliprole, Cyfluthrin, Cypermethrin, Emamectin Benzoate, Flubendiamide, Indoxacarb, Methomyl, Methoxyfenozide, Piperonyl Butoxide, Spinetoram, Tebufenozide, Zeta-Cypermethrin	Azadirachtin, <i>Bacillus thuringiensis</i> , Pheromones, Pyrethrins, Spinosad
Cabbage Looper	Beta-Cyfluthrin, Chlorantraniliprole, Cyfluthrin, Emamectin Benzoate, Endosulfan, Esfenvalerate, Flubendiamide, Indoxacarb, Malathion, Methomyl, Methoxyfenozide, Piperonyl Butoxide, Spinetoram, Tebufenozide, Zeta-Cypermethrin	Azadirachtin, <i>Bacillus thuringiensis</i> , Pyrethrins, Spinosad

<b>Diamondback Moth</b>	Acetamiprid, Beta-Cyfluthrin, Bifenthrin, Carbaryl, Chlorantraniliprole, Cyfluthrin, Emamectin Benzoate, Endosulfan, Flubendiamide, Indoxacarb, Malathion, Methomyl, Methoxyfenozide, Piperonyl Butoxide, Spinetoram, Zeta-Cypermethrin	Azadirachtin, <i>Bacillus thuringiensis</i> , Pheromones, Spinosad
<b>Flea Beetle</b>	Bifenthrin, Carbaryl, Cypermethrin, Endosulfan, Imidacloprid, Malathion, Piperonyl Butoxide, Thiamethoxam, Zeta-Cypermethrin	Azadirachtin, Kaolin, Pyrethrins
<b>Mite</b>	Petroleum Oil	Azadirachtin, Neem Oil, Pyrethrins

### Weeds and Common Name of Herbicidal Controls

<b>WEED</b>	<b>HERBICIDE*</b>	<b>OMRI LISTED HERBICIDE**</b>
<b>Preplant incorporated</b>	DCPA, Bensulide, Trifluralin	Corn Gluten Meal
<b>Preemergence</b>	DCPA	
<b>Postemergence</b>	Carfentrazone, Sethoxydim, Glyphosate, Pelargonic Acid, Clethodim, Clopyralid	D-Limonene, Clove Oil, Cinnamon Oil

\* The above is a partial listing of controls intended as examples. Some labels may have been revoked since the publication of this guide. Refer to product labels for specifics and use accordingly. Ensure that products with one of the listed active ingredients are registered for the crop it is to be used on. Failure to do the above may result in crop injury, death and/or citation for law violation. Humans, animals and the environment may also be adversely affected by misuse.

\*\* As stated in §205.206 of the National Organic Standards, pest management decisions should follow a hierarchical approach, which should be defined in a farm's organic systems plan. Please ensure that you have followed the appropriate steps and any product to be used in certified organic production systems has been approved by your certifying agent.

### Harvest

<b>Days after planting</b>	40-60 days
<b>Normal method</b>	Hand or machine
<b>Containers</b>	Bushel baskets/bulk
<b>Grades</b>	U.S. #1 and U.S. #2 depending upon defects and uniformity
<b>Packaging/Handling</b>	Bunched - 23-24 lb carton holding 24 1 lb film bags 30-35 lb bushel/crate/carton with 12-24 bunches (processing-

	bulked sold by ton)
<b>Anticipated yield/acre</b>	Fresh Market - 450 cartons Processing - 7-8 tons

### **Transit Conditions**

32°F at 90 - 95% RH; shelf-life 3 weeks.

### **Comments/Production Keys**

- Temperature near freezing 3 - 4 weeks prior to harvest increases quality
- Temperature above 75°F during the above time frame decreases yield and quality
- Refrigerate harvested leaves as soon as possible to prevent loss of quality; place under high humidity conditions (particularly important to prevent shriveling)