Alabama 4-H

Grows

Alabama Cooperative Extension System

Growing Birdhouse Gourds
for a Purple Martin Nesting Project

Bonnie PLANTS

extension
ALABAMA A&M & AUBURN UNIVERSITIES

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Growing Birdhouse Gourds for a Purple Martin Nesting Project

This project combines gardening with creating wildlife habitat over a 2-year period. Each participant will grow birdhouse gourds *(Lagenaria siceraria)*, also called bottle gourds or calabash gourds, in their own garden. Participants will harvest and cure (dry) the mature gourds before making them into purple martin nesting houses. After making the birdhouses, participants will construct a purple martin nesting pole and erect it in a location that allows them to observe whether nesting activity takes place. Once nesting colonies are established, participants will record their observations and share this data with other participants and the state 4-H office.

Why Grow and Erect Birdhouses for Purple Martins?

Purple martins are highly beneficial creatures. They are a member of the swallow family, which are insectivores, eating flying insects such as biting flies and other insect pests around the garden and home. Purple martins do eat mosquitoes, but since mosquitoes are mostly active at night and purple martins are active during the day, they do not feed on them as heavily as some people believe.

Over many generations, purple martins have become dependent on human-made nesting structures, thus requiring human help more than ever. Purple martin populations have decreased over the years due to loss of habitat in both their breeding (North America) and wintering habitats (Central and South America). By growing and constructing your own purple martin nesting site, you may create your own colony and help keep this species around for future generations to watch and enjoy.

Birdhouse Gourd History

Birdhouse gourds are members of the Cucurbitaceae or cucurbit family, of which there are about 975 species of food and ornamental plants worldwide. Members of this family include cucumbers, squashes, melons, gourds, and pumpkins. Many species are annual, and some are perennial. They are native to temperate and tropical areas.

The bottle gourd is one of the earliest domesticated crops, dating back at least 10,000 years in the Americas and 7,000 years in Asia. Its Latin name, *Lagenaria,* means bottle or flask. The mature hard-shelled gourds have been used as food containers, water jugs, floats for fishing nets, and even body armor. Early Native American groups grew and used them for many purposes including those listed above as well as for musical instruments and birdhouses to attract insect-eating purple martins.

Today, bottle gourds are still grown and used for many of the same purposes as well as for arts and crafts projects, some even becoming objects of fine art.

Growing Birdhouse Gourds

Birdhouse gourds have a very long growing season requiring up to 180 days. Alabama is covered by growing zones 7 to the north and 8 in the south, both of which meet the 180-day requirement. These

gourds also require a large growing area as the vines can reach lengths of 16 feet or more. Therefore, if you have plenty of gardening space, you may want to grow them on the ground and let the vines run. If you have limited space, you can plant them along a fence or let them grow over an arbor, pergola, trellis, or any other structure that the plants can twine around.

The foliage consists of fuzzy green leaves and white blossoms. Gourds produce both male and female blooms, but only the female bloom produces fruit. Before growing these gourds, think about how the finished gourds will be used. If you want the gourds to have flat bottoms so that they can stand up on their own, you will need to turn the gourds gently so that they are resting on their bottoms while they are growing to help them develop flattened bottoms. If you want to use them as hanging birdhouses, grow them on a fence or trellis so that the fruit develops while hanging. This will help keep the necks of the gourds straight, while the bottoms may be flat or slightly rounded.

In Alabama, birdhouse gourd seeds should be directly sown in the garden in the spring when the soil temperature reaches at least 65 degrees (late April or May). Gourds will grow in many types of soil and with varying amounts of sunlight but do best with well drained, slightly acidic soil and full sun (6 to 8 hours per day). Plant gourd seeds in slightly raised hills that are about 6 inches higher that the surrounding ground and cover an area of about 1 foot across to help with drainage. Space the hills 6 to 8 feet apart so that the vines will fill the space in between. Plant 5 to 6 seeds on a hill, a couple of inches apart and at a depth of about ½ to 1 inch. Once the seeds germinate (approximately 7 days) and the plants set their second or third set of true leaves, thin the plants to two or three plants per hill.

To start with the optimal soil conditions for your gourds, you should perform a soil test to determine soil Ph and fertilizer recommendations. For information about soil testing, see "Home Soil Testing: Taking a Sample" on the Alabama Extension website. If you choose not to soil test, apply a balanced fertilizer such as 10-10-10 to help the plants get started. Since gourds are heavy feeders, apply another application of fertilizer when the gourd vines begin to run.

Maintaining Your Gourd Crop

As do many other vegetable plants, gourds prefer a growing area free of weeds and grasses. When the plants first begin to grow, it is easy to hoe around them to remove weeds. Once the gourds begin to vine, stop hoeing near the plants as hoeing may damage the roots and allow disease to enter the plants. Instead, mulch around the plants using compost or leaves in a layer about 2 to 3 inches

deep. This will help stop weed seed growth and also provide the gourds with nutrients from the compost as it decomposes. Mulching also conserves moisture and reduces the need to water the plants during dry periods. You will want to continue hand-pulling any weeds or grasses that do grow, being careful to not step on or cut the gourd vines as you weed.

If a vine is growing or running in a direction that puts it in the way, you can carefully lift it and turn it in another direction. If the gourds are growing along a fence or on a trellis, help direct the vines to the climbing structure by carefully turning them and even helping them wrap around the structure. If a vine is getting too long (about 10 feet in length), you can prune it back a few inches. This will encourage the vine to grow side or lateral branches on which the gourd fruit develops.

Adequate moisture greatly benefits gourd growth. Even though gourds are considered resilient plants, you need to water them in dry conditions as plants need at least 1 inch of water per week. It is recommended that you water the plants in the morning so that the foliage can dry before evening, thus helping reduce the spread of foliar diseases amongst the gourds. If you are gardening on sandy soil, you may need to water more frequently than on other soil types. This is especially important until the gourds establish a good root system.

Preventing and Treating Pests and Diseases

Insect and animal pests may prey on gourds. Cucumber beetles, corn earworms, aphids, and stinkbugs are common insect pests. If they become a problem, you can treat the plants using an approved insecticide. Check with your local Extension office for recommendations. Wildlife such as deer and woodchucks may eat the plants, so some type of fencing may be needed. Mice, squirrels, and chipmunks may also chew into dry gourds to reach the seeds.

The large leaves and thick foliage of gourds make them susceptible to certain diseases such as powdery mildew. If possible, space plants so that there is air movement around the vines and leaves. Growing the plants on a fence or raised structure will help increase air movement. If plant disease does occur, check with your local Extension office for recommendations on how to treat it.

Harvesting Your Gourds

Birdhouse gourds take a long time to mature. Since Alabama has mild winters, it is recommended that gourds be left on the vine until the vine dies. Frost will not harm the gourds but will kill the plant, which is okay if the gourds are mature. If you want to harvest gourds earlier than this, look for gourds that have already started to turn brown or hard. Using the end of your fingernail, press into the gourd to see if it will cut into it. If your fingernail does not penetrate, the gourd is ready to be harvested.

When you are ready to harvest, use clippers to cut the stem, leaving a 3- to 4-inch handle (stem) on each gourd. You can leave gourds outside to dry but we suggest you move them to a well-ventilated area such as under a porch, in the garage, or in a shed so that they do not get wet. You can also leave them in the garden to dry, but place them on a raised platform or hang them from a fence or other structure so that air circulates around them so they can dry.

After a few months, the gourds should dry out and be ready to make into birdhouses. Mold may grow on the outside of the gourd, but this is normal and the mold will die once the gourd is thoroughly dried. You will know the gourd is ready when the shell is completely brown or black and brown, the gourd is much lighter, and you can shake it and feel the seeds moving around.

Timetable for Growing Birdhouse Gourds for Purple Martin Nesting Project

April 18. Deadline for participants to sign up for the project to receive free gourd seeds.

April 28. Participants receive a packet of birdhouse gourd seeds and a copy of the Birdhouse Gourd Journal.

May. Plant gourd seeds.

Date of planting until October 31 (or killing frost). Check on plants at least weekly and record activity and observations in your journal.

Harvest (after October 31). Harvest gourds and put them in location for drying. (Gourds may be harvested sooner if gourds are finished growing.)

October 31–February 1. Check on gourds occasionally to ensure they are drying. Throw away any that are rotting.

February 1–March 1. Make gourd birdhouses, and erect nesting pole.

March–August. Determine whether purple martins are using your nesting site.

May 13. If nesting site has occurred, observe the nesting site and record nesting activity.

August. Purple martins leave and migrate to their winter grounds. Report final nesting information to 4-H state office.

Good luck with your birdhouse gourd project.

Weekly Journal

Participants are required to keep a record of their activities and observations throughout the length of the project (2 years from April/May of the first year to the end of August of the second year). During the gourd active growing season (summer of year 1), participants should make at least a weekly gardening entry associated with the project. Once the gourds are harvested and in the process of drying, an entry every 2 weeks should suffice from October to January.

Entries should be made in the journal when the gourds are dried and ready to be made into birdhouses (February), as well as during the construction and erecting of the nesting site (to be completed by the first week of March).

Once the nesting site is erected, weekly observations should be conducted so that purple martin nesting success is verified. By the end of April, nesting should be taking place if it will happen. Weekly observations should continue throughout the summer to track either the purple martin nesting or to record other species of birds that may choose to nest in the gourds.

By the end of September of the second year, all data collected during the project will be submitted to the Alabama 4-H State Office. Further details regarding the reporting of this data follow the journal entries.

Section 1: Gardening Record

Preparing the Garden Site

Date:_____

Record your garden activity
and observations below:

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Place photo documentation or drawing here.

Planting the Gourds

Date: _____

How many hills of gourds did you plant? _____

How many seeds per hill did you plant? _____

Record your garden activity
and observations below:

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Place photo documentation or drawing here.

Garden Journal Week 1

Date: _____

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Garden Journal Week 2

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Garden Journal Week 3

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Garden Journal Week 4

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Garden Journal Week 5

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Garden Journal Week 6

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Garden Journal Week 7

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Garden Journal Week 8

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Garden Journal Week 9

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Garden Journal Week 10

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Garden Journal Week 11

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Garden Journal Week 12

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Place photo documentation or drawing here.

Garden Journal Week 13

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Record your garden activity
and observations below:

Place photo documentation or drawing here.

Garden Journal Week 14

Date: _____

Record your garden activity
and observations below:

Place photo documentation or drawing here.

Garden Journal Week 15

Date: _____

Record your garden activity
and observations below:

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Garden Journal Week 16

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Garden Journal Week 17

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Place photo documentation or drawing here.

Garden Journal Week 18

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Place photo documentation or drawing here.

Garden Journal Week 19

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Garden Journal Week 20

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Garden Journal Week 21

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Garden Journal Week 22

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Place photo documentation or drawing here.

Garden Journal Week 23

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Place photo documentation or drawing here.

Garden Journal Week 24

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Place photo documentation or drawing here.

Garden Journal Week 25

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Place photo documentation or drawing here.

Garden Journal Week 26

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Place photo documentation or drawing here.

Section 2: Gourd Harvesting & Drying Record

Harvesting Gourds

Date: _____

Record your garden activity and observations while harvesting the gourds:

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How many gourds did you harvest? _____

How many of the following sizes did you harvest?

_____ Less than 6" in diameter

_____ Between 6" and 10" in diameter

_____ Greater than 10" in diameter

Place photo documentation or drawing here.

Storage/Curing of Gourds

Date: _____

Where have you decided to store the gourds during the drying/curing process?

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Place photo documentation or drawing here.

Drying/Curing Bimonthly Entry 1

Date: _____

Record your observations of the gourds during the drying process:

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Place photo documentation or drawing here.

Drying/Curing Bimonthly Entry 2

Date: _____

Record your observations of the gourds during the drying process:

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Place photo documentation or drawing here.

Drying/Curing Bimonthly Entry 3

Date: _____

Record your observations of the gourds during the drying process:

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Place photo documentation or drawing here.

Drying/Curing Bimonthly Entry 4

Date: _____

Record your observations of the gourds during the drying process:

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Place photo documentation or drawing here.

Drying/Curing Bimonthly Entry 5

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Place photo documentation or drawing here.

Drying/Curing Bimonthly Entry 6

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Record your observations of the gourds during the drying process:

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Place photo documentation or drawing here.

Drying/Curing Bimonthly Entry 7

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Record your observations of the gourds during the drying process:

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Place photo documentation or drawing here.

Drying/Curing Bimonthly Entry 8

Date: _____

Record your observations of the gourds during the drying process:

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Place photo documentation or drawing here.

Section 3: Birdhouse/Nesting Site Construction & Nesting Observations

Report weekly once birdhouses are made and nesting site is erected.

Making the Birdhouses

Date: _____

What did you do to make the birdhouses?

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Place photo documentation or drawing here.

Constructing the Nesting Site

Date: _____

Record the materials used as well as what you did to construct the nesting site.

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Place photo documentation or drawing here.

Weekly Nesting Observations Entry 1

Date: _____

When did you make your first sighting of a purple martin? Record other observations.

Place photo documentation or drawing here.

Weekly Nesting Observations Entry 2

Date: _____

Record any nesting observations and bird behavior, including the number of purple martins seen.

Place photo documentation or drawing here.

Weekly Nesting Observations Entry 3

Date: _____

Record any nesting observations and bird behavior, including the number of purple martins seen.

Place photo documentation or drawing here.

Weekly Nesting Observations Entry 4

Date: _____

Record any nesting observations and bird behavior, including the number of purple martins seen.

Place photo documentation or drawing here.

Weekly Nesting Observations Entry 5

Date: _____

Record any nesting observations and bird behavior, including the number of purple martins seen.

Place photo documentation or drawing here.

Weekly Nesting Observations Entry 6

Date: _____

Record any nesting observations and bird behavior, including the number of purple martins seen.

Place photo documentation or drawing here.

Weekly Nesting Observations Entry 7

Date: _____

Record any nesting observations and bird behavior, including the number of purple martins seen.

Place photo documentation or drawing here.

Weekly Nesting Observations Entry 8

Date: _____

Record any nesting observations and bird behavior, including the number of purple martins seen.

Place photo documentation or drawing here.

Weekly Nesting Observations Entry 9

Date: _____

Record any nesting observations and bird behavior, including the number of purple martins seen.

Place photo documentation or drawing here.

Weekly Nesting Observations Entry 10

Date: _____

Record any nesting observations and bird behavior, including the number of purple martins seen.

Place photo documentation or drawing here.

Section 4: Reporting Observations & Data to 4-H State Office

Mail or email a copy of this page to the Alabama 4-H State Office at the following:

Doyle Keasal
Alabama 4-H State Specialist
227 Duncan Hall
Auburn University, Alabama 36849
Email: Keasade@aces.edu

On what date did you observe the first scout/arrival at your nesting site? _____

Was the first arrival a male or female purple martin? **Male** **Female**

On what date did the rest of the colony arrive at the nesting site? _____

Do you know of any other colonies around your neighborhood in other people's yards? _____

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How many birdhouse gourds did you erect? _____

How many of the birdhouse gourds did you observe being used for nesting? _____

How many male birds do you think were present? _____

How many female birds do you think were present? _____

How many pairs of birds (male and female) did you observe? _____

Once the young fledged (took to flight), how many juvenile birds did you observe? _____

How many clutches did each pair produce? _____

On what date did the purple martins start their migration south? _____

Share your thoughts about this project and what you learned from it in the space below.

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