

# Beautiful Gardens with Cottonseed Meal

## A Slow Release Natural Fertilizer

An attractive and functional landscape depends on: thoughtful planning and design; utilization of adapted plants; good soil preparation; proper fertilization; adequate moisture; insect, disease and weed control; and regular care. Although all of these requirements are important for successful landscaping, none exceeds the importance of the availability of an adequate supply of plant nutrients.

Cottonseed meal is an excellent natural source of plant nutrients. Its nitrogen, phosphorus, potash, and numerous minor elements are released over an extended period of time, preventing waste and runoff, while insuring long-lasting growth, beauty and productivity of turf grasses, landscape plants and vegetable gardens. Its high content of organic matter loosens tight, heavy soils and helps light, sandy soils hold moisture and nutrients. As a slow-release, natural fertilizer, cottonseed meal is safe to use in liberal amounts without danger of burning plants.

### Lawns of Living Velvet

Build beautiful landscapes upon thriving carpets of grass. Productive soils, pleasing contours, adapted turf grasses, adequate fertilization and moisture along with proper mowing, trimming and edging are some of the basic requirements of an attractive and enjoyable lawn.

Careful observation of the appearance of turf grasses indicates availability or deficiency of needed plant nutrients. Turf grasses respond readily to nitrogen and become faded or yellow when available nitrogen is inadequate. Deficiencies of phosphorus and potash restrict root and stem development, the depth and volume of turf is reduced, and it becomes more susceptible to invasion of undesirable plants, winter-kill, and midsummer thinning. In addition to being more attractive, properly fertilized lawns are cost efficient because they require less watering and maintenance.

Cottonseed meal is a premium, natural, slow-release lawn fertilizer that can be used alone or with a mixture of other natural or inorganic fertilizers. It contains about 6½% nitrogen, 2½% phosphoric acid, and 1¾% potash. These nutrients are released slowly and therefore are available to turf grass for extended periods of time. Cottonseed meal may be applied in liberal amounts because it will not burn leaves and resists losses by soil leaching. The organic matter it provides improves soil texture and helps conserve soil moisture. During dry weather and in low rainfall areas, water turf grasses sufficiently to keep the soil moist around grass roots. Light, frequent watering tends to prevent deep, efficient rooting and should be avoided. A minimum of one-half to one inch of water should be applied at each irrigation.

Frequency of mowing will vary with location and type of turf grass, but should be often enough to avoid causing an unsightly appearance to the lawn and exposing the stems and tender growth to sun damage. The height of mowing depends largely on the type of turf grass utilized and personal preference, but mowing too closely reduces the vigor of the plant and permits excessive evaporation.

The foundation soil for new lawns should be graded to provide the contour desired for beauty and any needed drainage. If additional topsoil is required for filling and leveling, avoid adding more than 2 to 3 inches, especially around established trees and shrubs. After careful grading, apply a 1 to 2 inch layer of cottonseed hulls or an appropriate amount of other organic material over the prepared area, along with 4 to 5 pounds of cottonseed meal per 100 square feet. If your soil is extremely poor, use the cottonseed meal at the rate of 8 to 10 pounds per 100 square feet. Thoroughly work the mixture of hulls and meal into the soil, level carefully, tamp or roll into a firm planting bed, and soak well. Rates of seeding or transplanting depends on the type of turf grass used. Reliable recommendations may be obtained from your Cooperative Extension Service, specialists at universities or experiment stations, or trained personnel at local co-ops, nurseries and garden centers. Avoid purchasing turf grass seed which are not certified free of noxious weed and grass seed, and check sod carefully for the presence of undesirable weeds and grasses, especially nutgrass.

Established lawns should be fertilized in the early spring. Frequent watering is required before new growth starts, and again in the fall before the turf grass starts to go dormant. Use cottonseed meal, or a mixture of ¾ cottonseed meal and ¼

recommended turf grass fertilizer for the spring application at the rate of 4 to 5 pounds per 100 square feet. If growth begins to slow toward mid-summer, apply about 3 pounds of cottonseed meal, or 2 pounds of cottonseed meal and ½ pound of a recommended turf grass fertilizer per 100 square feet. To encourage strong root development for the winter months, apply 3 to 4 pounds of cottonseed meal per 100 square feet in the early fall. After application of cottonseed meal or cottonseed meal and turf grass fertilizer, rake lightly and water thoroughly.

Frequent watering is required by newly established lawns during the first year. After the new turf grass reaches a height of 3 to 4 inches, mow regularly to encourage its rapid spread. Avoid mowing too closely during the first year of growth. Fertilization rates recommended above are usually adequate during the first growing season. If growth begins to slacken during midsummer, follow the recommendations given for established lawns.

With proper fertilization, watering and mowing, it should not be necessary to rake or bag turf grass clippings.

### **Shrubs-Accents of Beauty**

The numerous varieties of shrubs and foundation plants from which the home gardener may choose offer the opportunity to give emphasis, balance, and contrast to the landscape design. They provide masses of permanent growth or individual beauty of bark, leaves or flowers. Their beautiful colors can enliven the winter monotone and their soft shades blend into summer scenery.

Not all types of plants are suitable for the same conditions and uses, and discretion must temper enthusiasm in making selections. Most common mistakes result from selecting plants for the landscape without knowledge of their environmental requirements, cultural needs and general adaptability. Consideration should also be given to how the plants will appear when fully mature. Secure and follow the advice of respected plant authorities before investing in landscape plants with which you are not familiar.

Provide good drainage for the areas to be planted. Dig planting holes twice as wide as needed and sufficiently deep enough to set the shrubs at their original soil level. Place the plant in the center of the hole and backfill with a mixture of the original soil and peat moss or cottonseed hulls. Work one cupful of cottonseed meal into the soil around small shrubs and 2 to 4 cupfuls around larger plants. Water thoroughly to settle soil around roots and to remove air pockets. Continued use of cottonseed meal after the shrubs are established will maintain healthy, vigorous growth. In the early spring, apply 6 to 8 pounds of meal per 100 square feet of planted area. If the soil is exceptionally poor, include one pound of a recommended fertilizer.

After planting, mulch around the shrubs with 2 to 3 inches of cottonseed hulls or similar organic material to conserve moisture and help control weeds and grasses. Top dress the mulched area with about 1 pound of recommended fertilizer per 100 square feet to hasten decomposition and to prevent nitrogen deficiency as the organic material decays.

### **Flower Bed Freshness**

Carefully grown beds of annuals and perennials can provide a blooming calendar of the seasons. Properly planned, they bring the first thrilling blossoms of spring, bursts of summer colors, bracing vigor of fall blooms, and the wonder of winter-hardy flowers.

Arrange annual and perennial beds to conform to the landscape plan and use plant placement and double cropping to fully utilize the special advantages of the selected plants.

Green thumb rules for satisfying flower beds:

- Provide well-drained, rich soil in sun, light shade, or deep shade according to the requirements of plants
- Cultivate frequently and shallowly to keep soil friable
- Keep soil moist, but not water-logged
- Fertilize frequently to promote rapid growth and abundant flowering
- Clip or pinch off blooms as they begin to fade

- Use decaying cottonseed hulls, leaf mold, or peat moss to keep the soil loose and friable
- Treat, if needed, with recommended pesticides to control diseases and insects, carefully following label directions.

Cottonseed meal is an ideal fertilizer for use in flower beds because it provides the needed nutrients, prevents damage to feeder roots, furnishes long lasting effects, and improves soil condition. Work the meal into the soil at the rate of 6 pounds (one gallon) per 100 square feet of bed each time the flower bed is tilled or spaded in preparation for planting. If soils are seriously deficient, a recommended fertilizer should be used with the cottonseed meal at the rate of 1½ to 2 pounds per 100 square feet. Mulch around the plants with a 1 to 2 inch layer of cottonseed hulls or other organic material to help conserve soil moisture and prevent unwanted weeds and grasses.

### **Acid-Loving Plants**

Creation of breath-taking beauty is in store for those who learn and comply with the requirements of acid-soil-loving plants. There is no compromising with their requirements for acid soil conditions (low pH). In addition, most acid-soil-loving plants will not grow well in poorly drained soils.

The acidity of most soils, other than those that are calcium-based or found in arid areas, may be increased by the use of sulfur, aluminum sulfate, acid-based fertilizers, peat moss, cottonseed meal, other organic materials or a combination of all the above. Before investing in azaleas, camellias, rhododendrons, or gardenias, have your soil tested to determine whether you can adequately lower the soil pH to between 4.5 and 6.0.

The soil pH may be lowered from 6.5 to 4.5 with sulfur when used at the rate of 1½ pounds per 100 square feet on sandy soils and 4½ pounds on heavy clay soils. Highly calcareous soil should be removed entirely from the plant bed and replaced with the proper combination of non-calcium soil and acid-forming materials.

Lowering the soil pH increases the availability of soil nutrients, especially minor elements such as iron and magnesium, which are required by many acid-loving plants. A deficiency of iron is indicated by yellowing of the tissue between the veins of young leaves. Magnesium deficiency symptoms are similar to those of iron deficiency except that yellowing appears first on the older leaves. Deficiencies can be temporarily corrected by applying products containing these nutrients that are commonly available from co-ops, nurseries and garden centers. A longer lasting solution depends on the reduction of soil alkalinity. Check frequently for symptoms of alkaline soil conditions and use appropriate corrective measures to lower the pH of the soil.

Before setting out acid-soil-loving plants, test for satisfactory soil drainage by determining if water will drain satisfactorily from a 2 foot deep hole. Fill the hole half full of water. If water remains in the hole after 24 to 48 hours, consider installing a tile drainage system, or at the very least, planting on raised areas.

Fertilize acid-soil-loving plants with materials which provide the required nutrients and are acid in nature. Cottonseed meal is an ideal fertilizer because it provides most of the soil nutrients required, increases soil acidity and releases its plant nutrients gradually. Ammonium sulfate is a good source of supplementary nitrogen to use with cottonseed meal.

Because most acid-soil-loving plants have relatively shallow root systems, avoid cultivating and mulch around them with 2 to 3 inches of cottonseed hulls or a mixture of cottonseed hulls, peat moss, oak leaves or pine needles. Maintaining a mulch around the plants helps prevent growth of weeds and grasses, conserves soil moisture, keeps soil cool around shallow roots in the summer, and reduces the danger of soil freezing in the winter. Mix a small amount of cottonseed meal or ammonium sulfate with the organic mulch to hasten decay and to prevent nitrogen deficiency during its decay.

Colorful and spectacular, azaleas are not difficult to grow in many areas of the South - if grown in acid soils. A wide choice in plant size and color of blossoms provides an opportunity to make selections which are desirable in the landscape plan. Locate the azalea bed in a well-drained area which provides partial, but not dense, shade such as that provided by large, open trees. After the acid-soil (pH 4.5 to pH 5.5) bed has been properly prepared, azaleas may be transplanted in mild climates anytime except during hot summer. In colder climates, it is best to transplant in early spring before growth begins.

Dig a hole somewhat larger than needed to accommodate the root system. Set the plant in the center of the hole and backfill with peat moss or other organic matter such as decayed cottonseed hulls or well-rotted leaf mold supplemented with one cupful of cottonseed meal. Be sure the plant is set at the depth it was originally growing.

After planting, water thoroughly to settle the soil around the roots and to eliminate air pockets. Azaleas require an abundance of soil moisture and will wilt readily if not watered frequently during dry weather.

Apply  $\frac{1}{4}$  pound of cottonseed meal per square yard in late winter or early spring. Mix cottonseed meal in the organic mulch, but use care to avoid disturbing its shallow roots. If an inorganic fertilizer is used, apply no more than  $\frac{1}{8}$  pound per square yard at any one time. A second application of fertilizer may be needed about 6 weeks to 2 months later. Water thoroughly after each fertilizer application. The plants should be observed carefully to determine if they need additional fertilizer during the growing season. Low-growing varieties should produce 2 to 3 inches of growth each year while the taller varieties should grow 4 to 5 inches.

### **Roses**

The rose is truly the aristocrat of the flower garden. Enduring in popularity throughout generations of gardening, roses are hardy and grow well under a wide range of soil and climatic conditions. But as every rose enthusiast knows, they respond with added beauty to special care and attention.

Select a location which provides 5 to 6 hours of sunlight per day and freedom from competition from roots of other plants. Construct the bed so that its center may be reached easily with a hoe. In contrast to azaleas, roses prefer a rather heavy soil, but will not tolerate poor drainage. Roses are slightly less demanding for acid soils than azaleas and camellias, but are somewhat difficult to raise on moderate to highly alkaline soils.

Select varieties carefully to provide balance of foliage and color desired. Space the plants far enough apart to permit each to receive sunlight and good air circulation when matured. Avoid plants that have been weakened or damaged in storage or in shipping. Transplant bare-root plants before they initiate new growth. Container grown roses may be transplanted at almost anytime, if the roots are not disturbed. Dig the holes deep and wide enough to fully spread the roots of bare-root plants and to set the plant at the depth at which it was grown in the field. Backfill the hole with a mixture of soil and peat moss or decayed organic matter. Work one cupful of cottonseed meal, or a mixture of cottonseed meal and bone meal, into the soil around each plant and water thoroughly. A second application of fertilizer is usually desirable in late summer.

Roses require abundant soil moisture and should be irrigated frequently during dry weather. Avoid wetting the leaves, especially in the late afternoon, and follow a strict spraying or dusting schedule to prevent diseases and insects.

### **Verdant Vegetable Gardens**

If "greenthumb" vegetable gardeners have a secret to their success, it's proper soil preparation and fertilization. Experienced gardeners know the potential for producing good yields of high quality, home-grown vegetables is greatly enhanced by a well-prepared soil containing liberal amounts of organic matter and adequate available nutrients.

Cottonseed meal is an excellent means of providing both the organic matter and the nutrients vegetables need. It is a natural, slow-release, premium fertilizer containing nitrogen, phosphorous, and potassium, as well as numerous minor elements. When incorporated into the garden soil, cottonseed meal decomposes over a period of time, slowly releasing its nutrients and forming soil-improving humus.

When starting a new vegetable garden, apply 4 to 6 pounds of cottonseed meal and 1 to  $1\frac{1}{2}$  pounds of recommended garden fertilizer per 100 square feet of gardening area. For soil improvement, spread one to two inches of cottonseed hulls, decomposed leaves or grass clippings, well-rotted hay, or other form of organic matter over the surface of the garden. Till or spade the soil to a depth of 8 to 10 inches, thoroughly mixing in the meal, recommended fertilizer and organic material. For established, productive vegetable gardens, each time the soil is prepared for planting, apply the same amount of meal, reduce the amount of garden fertilizer by about one-half and continue to work in liberal amounts of organic matter.

When the garden is established and the soil warms, mulch around the plants with a 1 to 2 inch layer of cottonseed hulls or other suitable organic material. About two to three weeks later, apply a topdressing of cottonseed meal at the rate of  $1\frac{1}{2}$  to 2 pounds per 100 square feet, or per 35 feet of row. Lightly work the meal into the mulch and water thoroughly. Depending upon the crop and weather, additional applications of meal at the same rate may be needed periodically during the growing season.

**TYPICAL ANALYSES OF FERTILIZER MATERIALS**

Source	Nitrogen	Phosphoric Acid	Potash
ORGANIC MATERIALS:	%	%	%
Cottonseed Meal, 41%	6.56	2.54	1.78
Cottonseed Meal, 36%	5.76	2.31	1.88
Cottonseed Hulls,	0.62	0.14	1.00
Cotton Burs	1.00	0.30	4.50
Cotton Bur Ashes	--	2.70	45.00
Manure, Dairy	0.53	0.24	0.50
Manure, Poultry	2.26	2.61	1.70
Manure, Sheep	1.50	1.00	2.00
Bone Meal, Steamed	1.20	33.27	--
Wood Ashes	--	--	4.00
INORGANIC MATERIALS:			
Ammonium Nitrate	33.00	--	--
Ammonium Sulphate	21.00	--	--
Nitrate of Soda	16.00	--	--
Superphosphate, 20%	--	20.00	--
Muriate of Potash, 50%	--	--	50.00