

BOYS' AND GIRLS' 4-H CLUB SERIES

Flowers and Other Plants for the Home Yard



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FLOWERS AND OTHER PLANTS FOR THE HOME YARD

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PURPOSE OF BULLETIN

This bulletin is intended to provide 4-H club members and club leaders with the necessary information to carry out the several club projects connected with the planting and care of the home grounds. For convenience, these will be called Flower Projects.

A copy of this bulletin should be in the hands of each flower club member, for study and reference.

FLOWER CLUB UNITS

The flower club work has been changed to make it possible for any boy or girl to take one or more of the following projects related to flower gardening and the care of home grounds:

- I. The Lawn
- II. Annual Flowers
- III. Perennial Flowers
- IV. Climbing Plants
- V. Roses
- VI. Bulbs
- VII. House Plants
- VIII. Shrubs
- IX. Trees
- X. Pruning and Spraying

REQUIREMENTS

The minimum requirements for the Flower Projects are outlined in the 4-H Flower Record Book. These are so varied that a club member will be able to select a unit or combination of units which will fit the particular conditions of his home grounds.

It is not intended for this to be an easy project, but rather one demanding the same diligence and thoroughness expected of 4-H club members in any other branch of club work.

The possibilities in this type of work are unlimited. No project offers a greater opportunity for developing individual initiative and creating a deeper appreciation of the useful and beautiful in nature.

Club members are, therefore, urged to study their home surroundings and outline a project of such proportions as to merit recognition as a 4-H club member.

WHY IMPROVE THE HOME GROUNDS?

FIRST: To make the home a better place in which to live.

Ideal homes have not only neat and convenient interiors but also attractive grounds about them. A good lawn is the most important part of the yard picture. The flower borders add the color needed to make the place bright and inviting. The shrubs hide the sharp corners of the house and soften the angles about the walks. Trees form a frame for the whole and help to make the yard and buildings into one pleasing picture. How soon we become attached to the trees and shrubs that we have planted or cared for around the home! Throughout our lives we cherish the memories of such associations.

If the yard is bare of grass, with no flowers to brighten it, no shrubs to soften its borders, no trees to break the rays of the summer sun, what a bleak and barren sight! Yet with a little planting and some care each year, such a bare yard can be made a place of beauty.

SECOND: It is a duty.

We owe it to ourselves and to our neighborhood to make our own property as neat and attractive as possible. As young people, we need these pleasing surroundings to help us form noble ideals. Healthy bodies and wholesome minds demand an environment that is inspiring, clean and pleasing.

THIRD: It is a good financial investment.

A little money and some work spent in planting and caring for the home grounds may, in a few years, increase the value of the property more than a like amount of money and effort spent in any other manner.

Not only this, but the facts about flowers, shrubs and trees which may be learned on the home grounds may some day form the basis for a profitable business enterprise.

This is not a project in landscape architecture, but one which will lead to a greater appreciation of the beauties of well kept lawns, flower borders, shrubs and trees.



CHAPTER I

THE LAWN

The lawn is one of the most important features of the home grounds. The greatest beauty comes with simplicity. Therefore, the lawn should present only an open, smooth, well-cared-for space in front of the house. Flower beds should not be planted in the front lawn, but may be located along its boundaries.

To make a new lawn it is necessary to consider the following steps:

1. Grade the ground to give a level surface or gentle slopes and terraces.
2. Remove all rocks and see that the ground is well drained and carefully prepared.
3. Cover the surface with 2 to 4 inches of good top soil.
4. Apply a good commercial fertilizer (4-8-5 or better) at the rate of 5 pounds per 100 square feet. Rake this into the soil.
5. Use no lime unless soil is very acid.
6. Use good seed. Buy a suitable mixture from a reliable dealer, or mix as desired. A mixture containing 17 parts Kentucky bluegrass, 2 parts redtop, and 1 part white clover by weight, will make a good sod. Add Italian rye grass if quick, heavy growth is desired.

Sow at the rate of 4 to 6 pounds per 1000 square feet.

Lawns are already set in wire grass in many sections of Virginia. In such cases, the appearance of the lawn may be greatly improved by applying fertilizer and seeding to bluegrass without disturbing the old sod.

7. Sow the seed August 1 to October 1 or February 15 to April 15.
8. If seeded in late fall, mulch lightly with wheat straw.
9. Roll to get a firm seed bed, if the ground is not wet.
10. Weed the lawn carefully in spring and late fall.
11. Water when necessary.
12. Apply fertilizer or manure every fall.

To improve old lawns that are already well drained and smooth, it is only necessary to fertilize, weed and sow additional seed on the sod each fall. Manure is always a good fertilizer for sod but carries many weed seed. In many cases an application of ammonium sulphate, at the rate of 1 pound per 100 square feet, with the addition of fresh seed, will bring an old sod into fine growth. A light application of 4-8-5 fertilizer (4 to 5 pounds to 1000 square feet) in addition to the ammonium sulphate will often prove helpful. Spring applications of ni-

trate of soda may help the lawn in many cases. It is best to apply this during a rain at the rate of 100 to 200 pounds per acre. Never apply fertilizer when the sod is very dry.

Moss on lawns may mean that the soil is poorly drained. It often indicates a shortage of plant food. Ammonium sulphate or a complete fertilizer will correct the trouble in many cases. Sow additional seed if necessary. Do not use lime to get rid of moss. It may make bad matters worse.

Shady lawns may fail more because of poor ground than from the effects of shade. If fertilizer does not correct the trouble, fescues may be used instead of bluegrass; however, they are not attractive lawn grasses.

In certain sections near the coast it is almost impossible to have a good sod throughout the year. At the Virginia Truck Experiment Station near Norfolk the practice is followed of seeding the lawn with annual rye grass in November. In an average winter this provides an attractive carpet of tender green. However, it does not hold through the succeeding summer.

Mowing

Many blue grass lawns are ruined by close clipping. Blue grass is a perennial and spreads by the development of underground rootstocks. These underground parts cannot grow unless there is a top to feed them. When the grass is kept closely cut the rootstocks are weakened or killed for the lack of food and shade. Weeds and other grasses then have a better chance to get ahead of the bluegrass.

Newly planted grass should be allowed to have two to four inches of top until it becomes established. If seeded in late summer it would be safer not to mow it at all until the following year, unless it gets tall enough to fall.

By adjusting the roller on the lawn mower the blade may be lifted high enough to leave 1½ to 2 inches of top.

References

- F. B. 1677 — Planting and Care of Lawns.
- F. B. 1087 — Beautifying the Farmstead.
- F. B. 1132 — Planning the Farmstead.
- Catalogues of Nurserymen and Seedsmen.

CHAPTER II

ANNUAL FLOWERS

Annual flowers are those which bloom and make seed the same year they are planted. Biennials bloom the second year. Perennials bloom year after year for an indefinite period.

All of the plants discussed in this chapter are not annuals. Yet they all behave like annuals and, for practical purposes, may be classed as such.

Annuals are easy to cultivate, provide a great variety of color and will furnish flowers for many succeeding weeks.

It takes good seed to make good flowers. While many seed may be saved at home, it is a good plan to buy new ones from time to time from a reliable seedsman.

Annuals may be roughly divided into several groups according to their hardiness; however, these groupings will vary in different parts of the state because of the difference in climatic conditions.

Some annuals may be sown in the garden as soon as the ground can be worked.

Examples:	Sweet Pea	Larkspur	Alyssum
	Poppy	Calendula	

With others, it is usually best to start them in a box indoors or in a hot bed and transplant outdoors after the weather gets warm.

Examples:	Salvia	Verbena	Petunia
	Tithonia	Ageratum	Thunbergia

Some annuals will do better if they are not transplanted at all. For this reason they are usually seeded at the proper time where they are to grow.

Examples:	Poppy	Sweet Pea	Portulaca
	Wallflower	Four O'clock	Stock

It is not necessary to follow these suggested groupings. Experienced gardeners learn how to make plants grow even under adverse conditions.

The soil for annuals should be a light rich loam which is well drained. Any soil that is good enough to make a fine vegetable garden will be suitable for annuals. Commercial fertilizers and rotted manure should be used when necessary.

Most annuals like sunshine; some thrive in the shade. They vary as to height, color and type of growth. All of these things must be considered at the time of planting in order to get the best effects of foliage and flowers.

In a border of annuals, it is best to plant the tall ones toward the back, those of medium height near the middle, and the low types along the front. Then another grouping within this may be made according to the color of the flowers. Special effects may be gained through this means by those who are willing to give the matter sufficient time and study.

There are other useful groupings of annuals such as the following:

Annuals Good for Cutting

Aster	Cornflower	Scabiosa
Calendula	Larkspur	Snapdragon
Chrysanthemum	Marguerite Carnation	Sweet Pea
Coreopsis	Marigold	Verbena
Cosmos	Nasturtium	Zinnia

Fragrant Annuals

Sweet Pea	Candytuft	Sweet Scabiosa
Wallflower	Sweet Alyssum	Mignonette
Sweet Sultan		

Climbing Annuals (See chapter IV)

Annuals for Foliage Effects

Castor Bean	Summer Cypress	Amaranthus
Cockscomb	Ornamental Grasses	

Annuals for Winter Bouquets (Everlastings)

Strawflower	Globe Amaranth	Lunaria (Honesty)
Rhodanthe	Chinese Lantern Plant	

Annuals for Herbs

Anise—for seasoning.
Borage—used as a garnish and in cordials.
Curled Chervil—salads, garnishing and flavoring.
Dill—both foliage and seed used.
Fennel—for garnishing and sauces for fish.
Fumitory—old medicinal herb.
White London Mustard—salads.
Summer Savory—flavoring and seasoning.
Sweet Basil—seasoning.

References

F. B. 1171 — Growing Annual Flowering Plants.
F. B. 1370 — Dahlias for the Home.
F. B. 1743 — Hot Beds and Cold Frames.
F. B. 988 — Larkspur or Poison Weed.
Extension Leaflet — Dahlias.
Seed catalogs.



CHAPTER III

PERENNIAL FLOWERS

No flower garden is complete without an assortment of herbaceous perennials. Many plants of this group die to the ground in the fall and then develop a new top from the root in spring. They may live and bloom for a number of years, or they may die after a few seasons of growth.

The term perennial is really misleading when it is understood to mean that a border of perennial flowers, once planted, lasts forever. Such a border requires some regular care. On the whole, however, herbaceous perennials do require less labor and attention than annuals; and they provide flowers which far surpass those of the annuals in striking form and beauty.

Through study and careful selection a continuous show of color may be had in the perennial border from early spring until late autumn.

The perennial border, as its name implies, is nothing more than a strip of ground along a walk, about a building or along a boundary of the lawn. In formal gardens such borders would follow straight lines or form geometric figures. In other cases the border might be as irregular in outline as desired.

Perennial flowers generally do best when not in competition with tree roots or dense shade. However, some perennials can be found to suit every type of soil and location.

While perennials are not as sensitive to soil conditions as annuals, it pays to prepare the border with care. Dig it up and work in enough leaf mold from the woods to make the soil open and loamy. Manure that has rotted may also be applied and worked into the soil before the perennials are planted. In addition to the leaf mold and old manure, some commercial fertilizer should be used. Apply five pounds of 4-8-5 fertilizer to each 100 square feet and work into the soil before planting. All the labor and materials devoted to the preparation of the border will help to make the perennials produce finer flowers and remain vigorous over a longer period of years.

Propagation

Perennials are propagated by seeds, cuttings and by division of old plants. The seeds may be sown in early spring or in midsummer. Conditions determine which is best for any particular garden. The early seeding will give the strongest plants.

As a rule, perennials do not bloom the year the seed are planted. Most of them will develop flowers the second season. Plants from cuttings will behave in like manner. Divisions from roots or crowns often bloom the first season, and in the second and third year may produce flowers of better quality than the parent plant.

Like annuals, the perennials vary widely in height, shape and color of flowers. These facts make it possible for the artistic gardener to have a living picture, containing all the elements of variety and harmony in form and color.

An all-season garden is one in which there is some bloom through the entire growing season. This result can be attained by properly selecting and grouping the plants. By a careful use of annuals in the perennial border, the all-season garden may be more easily maintained.

Seasonal Care

Just as corn needs to be thinned to provide room for growth, so perennials and other flowers cannot grow normally under crowded conditions. Be sure to thin while the plants are small.

Then, too, the newly planted perennials will need frequent shallow cultivation. In very dry weather the young plants will need water. After each watering around small plants, the wet ground should be covered with a little dry soil. If the whole border is watered or wet by rain, scratch the surface as soon as the soil can be worked to prevent it from baking in the sun. After the perennials become well established, they will require less attention but will always need some seasonal care for best results. A mulch of leaf mold or strawy material will save moisture and help to keep down weeds.

The following is a descriptive list of a few herbaceous perennials that are hardy in Virginia. By reference to catalogues, hundreds of varieties of these and others may be added to this list:

Hardy Herbaceous Perennials (Tall)

Common name	Scientific name	Season of bloom	Remarks
Hollyhock	<i>Althaea rosea</i>	Summer	Single and double. Many varieties in shades of red, white, rose and yellow. Usually seeds itself. Subject to rust carried by button-weed and related plants. Best not to transplant.
Hardy Aster	<i>Aster</i>	Autumn	Vigorous and free bloomers. Many native sorts throughout Virginia. Try some of these, as well as cultivated varieties. Lavender shades predominate.
False Camomile	<i>Boltonia</i>	Late summer	Similar to above. Not good for cutting. Very vigorous and attractive. Pink or white.
Biennial Canterbury Bells	<i>Campanula</i>	Summer	Flowers second season from seed. Must be sown every year for continuous bloom. Exquisite shades of color. Needs a little shade.
Shasta Daisy	<i>Chrysanthemum</i>	June	Easily grown. Good for center portion of border. Large flowers on long stems. Several colors. Fine for cutting.

Hardy Herbaceous Perennials (Tall) Cont.

Common name	Scientific name	Season of bloom	Remarks
Larkspur	Delphinium	Summer	Cannot stand acid soils or manure. Fertilize with wood ashes and commercial fertilizers. Belladonna (azure blue) and Bellamosum (dark blue) are best for garden use. Roots will last longer if blooms are cut to prevent formation of seed.
Bleeding Heart	Dicentra spectabilis	June	Found in most old gardens. Graceful drooping branches with deep rose heart-shaped flowers. A new variety is said to bloom all summer. Seed or division.
Fox Glove (Biennial)	Digitalis	June-July	Does best in partial shade. Needs some ground cover in severe weather. A well-known drug plant. Common in old gardens. From seed. Do not transplant.
Marshmallow	Hibiscus moscheutos	Summer	Very vigorous except in dry and poor soils. Large handsome flowers, white and crimson. A cousin of the hollyhock. Seeds may not germinate until second year unless soaked or scarified.
Red Hot Poker	Kniphofia (Tritoma)	Late summer	Unusual flowers from lemon to orange red. Bloom second year from seed. Make showy arrangements when cut and used with delphinium.
Gay Feather or Blazing Star	Liatris (Pychnostachia blooms before scarriosa)	August	Tall spikes tipped with closely set feathery flowers of lavender rose. Opens from top downward. Start with tubers for good blooms first year. May make small spikes second year from seed. Worth trying.
Oriental Poppy	Papaver orientale	June	Sow seed in June or July. Do not transplant. Should bloom following year. Handsome flowers on long stems. Some flowers six inches across. Propagated also by root cuttings
Phlox	Phlox paniculata	Late summer	Plants subject to mildew. Do not plant in crowded position, or in dense shade. Many beautiful named hybrids. When seed from these drop and come up, the new plants tend to revert to the old type. No garden is complete without them.
False Dragonhead	Physostegia	Late summer	A very hardy and desirable plant. Several varieties. The two old sorts are tall. One is lavender, the other white. Fine for cutting.
Golden Glow	Rudbeckia lacinata flora pleno	Autumn	A native plant with double flowers. Found in many gardens. Usually planted and then neglected for ever after. Responds to proper care and treatment. Cut back severely after flowering season is over. Water and fertilize. Excellent for cutting. Propagated by division.
Cone Flower	Rudbeckia purpurea	July-October	A giant form. Flowers 3 to 4 inches across. Single. Rayflorets reddish purple; center large cone of brown. Start with seed. Likes moist soil and a little shade.

Hardy Herbaceous Perennials (Medium Height)

Common name	Scientific name	Season of bloom	Remarks
Columbine	Aquilegia	May-June	Hardy and useful plants. Bloom after the earliest flowers are gone. Many new and beautiful hybrids offered. Start with seed. Save and sow some seed each year.
Artemisia	Artemisia Silver King	Summer	For foliage effects. A very showy white-leaved plant. Sometimes grows more than 2 feet high. Suitable for cutting and for color effects in the garden.
Hardy Cornflower (Dusty Miller)	Centaurea	July-September	Another foliage plant. Silver-gray. Used for ribbon beds, edging, etc. Several varieties.
Hardy Chrysanthemum	Chrysanthemum	September until frost	A most useful and interesting group. Usually planted and neglected. Should be divided and replanted every year for finest flowers. Requires feed, pinching, spraying, and in some cases thinning and staking. Hundreds of varieties. Disbud for large flowers.
Half-hardy Korean Chrysanthemum	Chrysanthemum	Aug.-September	A new race of hybrids that should be tested for each section of the state before much is invested in them. Highly advertised and promising.
Coreopsis	Coreopsis	June-September	Long-lasting flowers. Two to three inches in diameter. Several types. Lemon to deep yellow. Some bloom first year from seed. Clumps should be divided frequently. Fine for cutting.
Blanket Flower	Gaillardia	Summer	Single and double forms. Reseeds itself. Responds to feeding and cultivation. Likes sunny location. Withstands dry seasons. Good for cutting.
Baby's Breath	Gypsophila paniculata	July-August	So named because of a supposed love for gypsum in the soil. Single flowers in feathery masses of white. There is a double form of this type. The variety used by florists, Bristol Fairy, is propagated by cuttings or by grafting on root of paniculata.
Day Lily	Hemerocallis	May-June	A widely used perennial. Yellow-orange and gold in old forms. Very hardy and dependable. Some new hybrids now listed. Hold on to the old ones until the hybrids have proved their worth. Propagated by division.
Coral Bells (Alum Root)	Heuchera	Late spring	About 20 native species belong to this group. One, <i>H. sanguinea</i> , is very ornamental. Fiery red flowers. Low compact foliage. Flower spikes 18 inches long. Likes moist and partially shaded places.
German Iris (Section I)	Iris	Spring	This group of iris includes all those with thick rhizomes which creep along the surface of the ground. Commonly referred to as bearded iris. Hundreds of named varieties. Very useful in borders. Includes Siberian Iris. Do not apply manure.
Bulbous Iris (Section II)	Iris	Spring and summer	All in this group have bulbous or tuberous rootstocks. A group that has not been so widely planted. Excellent for garden use. Exquisite flowers. Includes Spanish, Dutch, English and Japanese Iris.
Peony	<i>Paeonia chinensis</i>	May-June	Propagated by division of crowns and by seed. Deep planting of roots may prevent blooming. Set eyes about 2½ inches deep. Divide old plants in early October and plant new roots at that time.
Mullein	Verbascum	Summer	Withstands the hot, dry conditions of our summers. Little used plants deserving more attention.

Hardy Herbaceous Perennials (Low)

Common name	Scientific name	Season of bloom	Remarks
Dwarf Goldentuft (Basket of gold)	Alyssum saxatile	May	A good edging plant. Six to nine inches. Start with seed.
Windflower	Anemone — St. Brigid	Late summer and fall	Single and semi-double forms. Usually blooms second year from seed. Plants started in January may bloom first year. Various colors. Likes some shade.
Dwarf or Rock Aster	Aster alpinus	Summer	One of the hardy asters suitable for edging or planting along a wall.
Dutchman's Breeches	Dicentra	Spring	A native plant. One of the most graceful of the early flowers. Its cousin, the bleeding-heart, came to us from Japan.
Sweet William (Biennial)	Dianthus	Spring	Should be seeded each year for continuous bloom. Often reseeds itself.
Hardy Pinks	Dianthus	Spring and summer	Usually started by division. May sow seed for bloom next year.
Moss Phlox	Phlox subulata	Summer	Native plants in various types and varieties. Grow naturally on well-drained, shale soil. Can stand sun. Very pretty.
Hardy Primrose	Primula	Summer	Includes several types of primulas, all of which should be tested first on a small scale.

Hardy Perennials for the Herb Garden

Camomile—soothing tea made from dried flowers.
 Chives—for salad and flavoring.
 Beebalm—fragrant seeds.
 Citron Thyme—lemon-scented.
 Common Thyme—seasoning for meats, dressing and soups.
 Common Balm—scented leaves for tea, etc.
 Horehound—seasoning; old cough remedy.
 Hyssop—seasoning for vegetables.
 Common Lavender—seasoning.
 True Lavender—dried flowers used to perfume linens.
 Mugwort—aromatic and decorative.
 Peppermint—leaves used in cooling drinks.
 Rosemary—fragrant leaves.
 Rue—seasoning; bitter.
 Sage—flavoring dressings and meats.
 St. John's Wort—aromatic.
 Spearmint—for iced drinks.
 Sweet Marjoram—seasoning.
 Sweet Woodruff—aromatic leaves.
 Tansy—seasoning.
 Tarragon—salads and sauces.
 Winter Savory—seasoning for meats, etc.
 Wormwood—flavoring and in cordials.

References

F. B. 1406 — Garden Irises.
 F. B. 1381 — Herbaceous Perennials.
 F. B. 1311 — Chrysanthemums for the Home.
 F. B. 1318 — Greenhouse Construction and Heating.
 F. B. 1306 — Insect Enemies of the Chrysanthemum.
 F. B. 663 — Drug Plants.
 Catalogs of seedsmen and nurserymen.

CHAPTER IV

CLIMBING PLANTS

This group includes both annuals and perennials. Some are excellent for summer screens around old buildings, fences, etc., while others may be trained over walls and up the sides of stone or brick buildings.

Climbing Annuals

Coboea scandens	Sweet Pea
Japanese Hop	Nasturtium
Balloon Vine	Blackeyed Susan
Scarlet Runner Bean	Morning Glory
Decorative Gourds	Cypress Vine

Perennial Climbers

These should be selected with the greatest care for each particular use. Sometimes an innocent looking kudzu vine is planted by a front porch and after a few years becomes an unruly monster, cutting out all light and growing here and there over the lawn. Kudzu is a useful plant in its place, provided it is trained and pruned.

Virginia creeper is a beautiful and useful vine. It likes sun. All summer it is pretty, while in autumn its richly colored foliage and crop of berries make it strikingly beautiful. Its cousin, Boston ivy, is especially good for covering brick or stone walls. If trained on a residence and pruned when needed, it lends a graceful touch to what might otherwise be a monotonous wall.

The trumpet vine forms a heavy mat of growth and should not be planted close to wooden buildings. The wisteria is the supreme perennial climber for eastern and middle Virginia. Even this plant may be trained as a shrub by timely pruning and shaping. Seedling plants are slow to bloom. Grafted plants are best.

Clematis is widely used. The one most commonly planted is the beautiful *paniculata* with white flowers. Others have large purple blooms.

Bitter sweet, like holly, has its berries on pistillate plants only. It is necessary to have both the staminate and pistillate plants close together in order to have a good showing of the orange fruits. These make beautiful winter bouquets.

The chinese lace vine belongs to the buckwheat family and produces masses of feathery white flowers most of the summer. It is easy to root.

English ivy is too well known in Virginia to need comment. It grows slowly.

Euonymus radicans may be used as a low climber but serves a more useful purpose when allowed to fall over a wall or cover a bank. It is subject to scale.

The five-leaf akebia is one of the most graceful of our hardy climbers. In early spring it produces bunches of violet-brown flowers which have a pleasant cinnamon odor.

All plants mentioned in this group require some training and pruning each year for best results. From time to time some may require spraying. On the whole, however, all of them are easy to grow.

References

Catalogs of seedsmen and nurserymen.
Florida Bulletin No. 188, Experiment Station, Gainesville, Fla.



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CHAPTER V

ROSES

The rose is considered the queen of flowers. There are many different types and hundreds of varieties. Some are old sorts that have proved valuable through the years. Others have some weaknesses which make them subject to disease or to injury from bad weather. Still others are worthless except for gardeners who have the time and means to give them special attention.

It should be the aim of 4-H club members to have a few good rose plants rather than have many and neglect them. A fine rose blossom is difficult to produce and worth all the effort it takes.

It is not possible in the short space provided here to tell one all about roses. The following suggest the most important things to do:

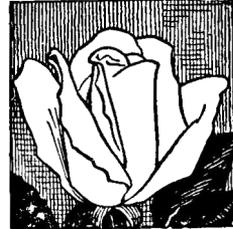
1. Select sorts that are suited to your climate and soil. Start cuttings of the roses that are doing well in your community. (See list at end of this chapter.)
2. Provide enough plant food to keep the roses growing steadily. Manure and commercial fertilizer are both good.
3. Do not dig around the rose bushes while they are growing and blooming. If it is necessary to cut out weeds, let the digging be as shallow as possible.
4. Mulch the roses lightly in summer with rotted manure, straw, etc., to hold moisture and keep down weeds.
5. Watch for insects that eat the leaves. Ramblers are often ruined by the rose slug before the damage is noticed. (See chapter X)
6. Kill the aphids (plant lice) when they first appear. (See chapter X)
7. As soon as the ramblers have finished blooming, give them a good pruning. Take out the old canes and leave room for the growth of new ones.
8. Do not feed the roses in late summer. Give them a chance to stop growing before freezing weather.
9. Do not water roses except in extreme cases, then soak thoroughly.
10. During the spring and summer, spray or dust roses, especially the bush sorts, to prevent leaf diseases. (See chapter X)
11. After the foliage drops, clean up all dead leaves and trash around the bush roses. Spray with lime-sulphur or bordeaux. In sections of the state where it is necessary to protect the bush roses against freezing weather, pile soil around the bushes to a height of 8 inches in December. Dirt is best, but other materials may be used for winter protection. Do not uncover side roots in order to get soil for this purpose.

12. When danger of freezing is over in the spring, remove the mounds, etc., and prune. Cut all bush roses (hybrid-teas) to within 18 to 24 inches of the ground. Let the hybrid perpetuals stand 3 to 4 feet after they are pruned.

A few of the many good roses available:

Hybrid Tea (bush roses)

Pink Radiance
Red Radiance
Etoile de Holland (red)
Briercliff (pink)
Talisman (orange-scarlet)
Sunburst (golden-orange)
Kaiserin Augusta Victoria (white)
Francis Scott Key (red)



Hybrid Perpetual (very hardy)

Frau Karl Druschki (white American Beauty)
American Beauty (pink)
General Jacqueminot (scarlet)

Climbing (resistant to mildew)

Dr. W. Van Fleet (light pink)
Paul's Scarlet
Mary Wallace (bright pink)
Silver Moon (large single, white)
Gardenia (creamy yellow)

Baby Rambler (Polyantha)

Cecile Brunner (small double, light pink)
Chatillon (semi-double, bright pink)
Mrs. R. M. Finch (rose pink)
Golden Salmon (orange-scarlet)

Other Groups

China or Bengal Roses
Lambertiana Roses
The Moss Rose
The Damask Rose
Shrub Roses (Rugosa)
Scotch Roses
Austrian Briar Roses
Hybrid Sweetbrier Roses
Wild Roses

References

Virginia Truck Experiment Station, Norfolk, Virginia, Bul. 79—Rose Diseases and Insects.

F. B. 1547 — Rose Diseases.
Annual of American Rose Society.
Catalogs of nurserymen.
Inspect rose plots at V. P. I.

CHAPTER VI

BULBS

The term bulb is used here to include fleshy roots, tubers, corms, etc., as well as the true bulbs. Many flowering bulbs are hardy throughout Virginia. Some should find a place in every garden.

The most important bulbs for 4-H club work are:

Hardy			
	Planting Depth Bottom of Bulb		Planting Depth Bottom of Bulb
Narcissus (Jonquil) -----	4-5 inches	Lilies -----	4½-5 inches
Tulips -----	4 "	Snowdrops -----	2½ "
Hyacinths -----	4 "	Grape Hyacinths -----	2½ "
Crocus -----	2 "	Bulbous Iris -----	3 -4 "
Lily of the Valley -----	3 "		

Tender		
Dahlias	Cannas	Gladiolus

By referring to the catalogues the names and descriptions of many varieties may be found.

The soil for hardy bulbs should be carefully prepared without the use of fresh manure. Use small amounts of commercial fertilizer and good garden loam or leaf mold. Plant the bulbs at the depth indicated opposite each. Set new bulbs in October or November. Divide and transplant old bulbs soon after the blooming season is over. Mulch for winter protection when necessary.

The tender flowering bulbs for the garden are planted each spring and dug before freezing weather. Ask your county agent for leaflets on dahlia culture and winter care of gladiolus and dahlia bulbs.

Certain bulbs, such as tulips and hyacinths, may be forced into flower by planting in pots, etc., in late autumn and covering these with ashes, sand or soil to prevent freezing. In February or later, these may be brought into the house to bloom.

References

- U. S. D. A. Cir. 23—Easily Propagated Lilies.
- F. B. 1082 — Production of Tulip Bulbs.
- C. 122 — Daffodils.
- C. 112 — Production of Hyacinth Bulbs.
- C. 102 — Production of Lily Bulbs.
- Virginia Truck Experiment Station, Norfolk,
- Virginia (Narcissus Fly—Bul.60).
- Catalogues of Seedsmen and Nurserymen.



CHAPTER VII

HOUSE PLANTS

Plants in the home serve to condition the air by liberating moisture and oxygen. This is a help because the air is often too dry for the good of either people or plants. Then, house plants brighten the home with their attractive foliage or flowers as nothing else can do.

The following is a list of a few that are useful indoors :

Abutilon	Coleus	Solanum
Amaryllis	Ferns	Narcissus (paper white)
Asparagus	Geraniums	Night Blooming Cereus
Aspidistra	Impatiens	Sanseveria
Begonia	Ivy	Succulents
	Lantana	Sweet potato vines
		Wandering Jew

Things to watch about house plants :

1. See that good drainage is provided in pots and boxes.
2. Water only when necessary. Many house plants are drowned.
3. Provide good, loamy soil. Good potting soil may be prepared by mixing 3 parts of clay loam, 1 part of sand and 1 part of rotted manure. After it is screened, add to each bushel of soil as much 4-8-5 fertilizer as a 3 inch pot will hold. Mix. If sandy soil is used, leave out the sand and mix the soil and manure 4 to 1.
4. Learn to feed the plants when they need it.
5. From time to time get the dust off the foliage.
6. Replant before growth becomes too crowded.
7. Spray when necessary for insects. (See chapter X)
8. Cut back such plants as geraniums to keep them bushy and sturdy.

References

House Plants—Circular No. 100—Kansas State Agricultural College, Manhattan, Kansas.

Plants in the Home—Bulletin 224—Agricultural Experiment Station, Fargo, North Dakota.

Control of Aphids on House Plants—Cornell Extension Bulletin 162—Cornell University, Ithaca, New York.

CHAPTER VIII

SHRUBS

Shrubs rank next to the lawn in importance for the average yard. There are so many different types and varieties, it is difficult for one to decide which to plant. Some shrubs that are hardy and useful in eastern Virginia are killed every winter in the colder sections of the state. On the other hand, some that are winter killed in the tidewater belt suffer no injury in the mountains.

Members of the 4-H clubs might look around their own neighborhood to learn about shrubs that do best under local conditions. They might also visit or write nearby nurserymen for further facts.

Special thought should be given to the native shrubs. In every section of Virginia there are many which are useful for home planting. The conditions under which they grow naturally should be closely observed before any attempt is made to use them in the yard. Notice whether they are in wet or dry locations; nature of soil; amount of shade; exposure to the sun, etc.

Any who visit the restored gardens at Williamsburg will be impressed with the number of native shrubs being used there.

It is intended here to mention only a few shrubs and something about their care. The problem of where to plant and how to arrange the shrubs in the yard for best effects is equally important. This deals with landscape architecture. Club members may study bulletins on the subject, and observe the arrangements in attractive plantings.

Shrubs need fertilizer and other seasonal care. (See chapter X for pruning and spraying.)

Trees and shrubs may be transplanted from the woods at almost any time when they are not growing. Native evergreens are usually moved in March or August. Deciduous trees (those that lose their leaves) may be transplanted in early spring or after they become dormant in winter.

It is impossible to dig a wild shrub or tree without leaving most of the roots in the ground. To offset this loss of roots, some of the top is usually removed.

Both evergreen and deciduous plants are root-pruned by digging a narrow ditch around them $1\frac{1}{2}$ to 2 years before they are to be moved. Fill the ditch after the roots are cut.

Native shrubs may be bought from Virginia nurserymen. If propagated and grown in nurseries, they usually have better roots than those collected from the woods.

A few of the most useful deciduous shrubs are:

1. *Spiraea*—Many forms. The old bridalwreath is one of them. They are hardy and attractive. Some bloom very early. Prune these as soon as the flowers die. Prune the late blooming varieties before growth starts in the spring.

2. **Forsythia** (Golden Bells)—These bloom in March or April before any leaves appear. Some are more upright than others. One variety can be trained on a trellis. Prune as soon as the flowers die.

3. **Lilac** (*Syringa*)—These beautiful shrubs are found in many yards where they are usually neglected. More than a hundred varieties are available. Set grafted plants deep enough for the development of roots above the graft. Plant in sunny locations.

4. **Mockorange** (*Philadelphus*)—One of the best shrubs in the old gardens. Many new varieties listed now. Prune in late winter or early spring.

5. **Bush Honeysuckle** (*Lonicera*)—Some of these bloom in winter in eastern Virginia. They are very fragrant. Others bear attractive fruits which the birds love in winter. Prune early blooming varieties after the blooms die. Prune late and berry-bearing varieties in late winter.

6. **Crapemyrtle** (*Lagerstroemia*)—This lovely plant is a tender shrub in the mountains of Virginia, where its planting is not recommended. In the tidewater belt it is a noble shrub or small tree. Prune in late spring.

7. **Crocus Rose** (*Kerria*)—Single and double forms. Flowers yellow. Very attractive.

8. **Hydrangea**—The best known variety is the hardy *H. paniculata grandiflora*. It is called the Peegee hydrangea.

The white flower heads are produced in late summer on branches which grow during the same season. In order to get large flower heads, cut the plant to within a few inches of the ground in late winter. It may be shaped as a shrub if desired.

Tender hydrangeas may be planted in the warmer portions of the state. In this type the flowering bud develops in late fall. These branches should not be pruned like those of the Peegee variety.

Flowers of tender sorts will come blue or pink according to the condition of the soil. An acid soil produces blue blooms; a limed soil pink flowers.

9. **Althea or Rose of Sharon** (*Hibiscus syriacus*)—Hardy and attractive shrub in single and double varieties. Blooms all summer. Useful as a hedge or screen. Should be pruned in late winter each year. Cut out some of the center top branches to make it spread. Can be shaped as desired.

10. **Beautybush** (*Kolkwitzia*)—A Chinese shrub resembling the weigela. Hardy. Prune after the flowers fall and, when necessary, cut the ends of branches in late winter.

Broad-Leaved Evergreen Shrubs

1. **Abelia** (*Abelia grandiflora*)—Hardy. Blooms all summer. Free from insects and diseases. Needs fertilizer. Prune in late winter.

2. **Boxwood** (*Buxus*)—Dwarf and tree forms. Hardy throughout Virginia. Damaged by plowing or hoeing. Suffers for water in dry weather and for lack of plant food. Must be protected from red spiders. (See chapter X).

3. **Cotoneaster** (*Co-to'ne-as'ter*)—A family of unusual berry-bearing shrubs. Some are tall; others droop; some cover the ground. Prune in late winter.

4. **Euonymus** (*Evonymus*)—The Japanese bush varieties are so susceptible to scale that they are hardly worth the trouble of caring for them. When they become infested it is usually best to dig them up and burn them.

Some of the trailing and native sorts are more useful. (See chapter X)

5. **Rhododendron**—Native species in our mountains. Many beautiful hybrids in various colors offered by nurserymen. Easily transplanted if handled properly. Likes some shade. Roots grow close to top of ground in acid leafmold. Aluminum sulphate may be applied to make soil acid.

Transplant in March or August. If there is doubt about native plants living, cut off all tops close to ground when planted. Do not apply heavy mulch. Do not use any manure.

6. **Azaleas**—Hardy. Covered with flowers in early summer. Many varieties in different colors. Require acid soil like rhododendron.

7. **Privet (Ligustrum)**—Used chiefly for hedges and screens. Beautiful when allowed to go unpruned. The broad-leaf privet (*lucidum*) is not always hardy, even in tidewater Virginia.

8. **Elaeagnus**—Many varieties. *Pungens* is evergreen and hardy. They bloom from late summer to freezing weather. Very fragrant. The Russian olive is *Elaeagnus angustifolia*.

9. **Holly (Ilex)**—American holly is hardy in almost all parts of Virginia. The berry-bearing trees are fertilized by the pollen-bearing trees. The two must grow near each other or be grafted on the same tree in order to bear berries. Native holly trees should be shaped by pruning each year. They are difficult to transplant. Many other kinds of holly, such as English, Japanese, etc. are listed by nurserymen.

10. **Osmanthus**—Several varieties—attractive foliage.

11. **Pyracantha**—White flowers followed by orange-scarlet berries. One variety has red berries.

12. **Mountain Andromeda (Pieris)**—Dark green leaves. Waxy white flowers. Requires acid soil. See *Leucothoe*.

13. **Barberry (Berberis)**—Several new evergreen varieties. Very attractive.

References

F. B. 1591 — Transplanting Trees and Shrubs.

F. B. 1567 — Propagation of Trees and Shrubs.

Virginia Truck Experiment Station, Norfolk (Ornamental Plants—Bul. 62).
Catalogs of nurserymen.



LILAC

CHAPTER IX

TREES

Trees are noble and useful plants around the home. They add beauty to our home grounds. They furnish shade and protect the birds. They may break the force of the wind and screen unsightly views.

We often fail to appreciate trees as we should. We damage them without thought. They are left to grow without water or plant food.

The following list contains but a few of the many desirable trees for home plantings in Virginia :

Common name	Scientific name	Height	Remarks
Sycamore	Platanus	70-80	American and European varieties. Excellent tree. Grows best in a moist location.
American Elm	Ulmus Americana	60-80	One of our finest trees. May be injured by Dutch elm disease in future years. Chinese elm grows faster but is damaged by beetles.
Linden	Tilia	30-60	The American bass wood or linden has larger leaves and makes a greater tree than the European variety.
White Ash	Fraxinus Viridis	60-100	Rapid grower. Likes moist locations. Broad head. Good for large grounds.
White Dogwood	Cornus Florida	15-25	Virginia State flower. Subject to borers which may be cut out if closely watched.
Honey Locust	Gleditsia Triacanthos	50-75	Thorny tree, white flowers, attractive foliage, long flat pods. Rapid grower.
Black Walnut	Juglans Niger	50-75	Native tree. Valuable for timber and nuts. Secretions from roots kill tomatoes, peppers and other plants planted near it.
Kentucky Coffee Tree	Gymnocladus dioica	50-75	Picturesque tree. Slow growing.
Pin Oak	Quercus Palustris	60-80	Vigorous. Succeeds throughout Virginia. Good for lawns and avenues. Grows faster in moist soils.
Tulip Poplar	Liriodendron	50-70	Rapid growing. Very attractive in flower. Likes moist soil.
White Oak	Quercus Alba	60-80	A grand tree, especially for eastern Virginia.
Maples	Acer	25-50	The Norway maple grows slowly and is subject to maple wilt. The silver maple produces too many surface roots to make it desirable for lawns. The sugar maple grows slowly but is one of the best where it can be planted.
Poplar	Populus	50-70	The Lombardy poplar is suited only for temporary plantings. The Carolina poplar is undesirable because of surface roots and tendency to sprout. Very brittle. Poplars like willows have a way of stopping drain pipes by filling them with roots.

Common name	Scientific name	Height	Remarks
Cedar	Juniperus	To 60	Numerous types and varieties. Our Virginia red cedar belongs here. Carries cedar rust to apples. Fine for ornamental plantings. Requires annual pruning and shearing for dwarf plants.
Spruce	Picea	50-80	Best suited to cooler sections of state.
Pine	Pinus	40-70	There are many species of pines suited to the different sections of the state. In eastern Virginia the loblolly pine is both useful and ornamental. Should be used more in large yards.
Hemlock	Tsuga	70-80	The Canadian and Carolina hemlocks are both native trees. Fine for use on lawns where necessary space is provided. May be dwarfed for hedges or small specimens if sheared every spring.
Arborvitae	Thuja	20-50	Many varieties and types. May be dwarfed if sheared and pruned each spring.
Yew	Taxus	15-40	Many types. Slow growth. May be used for foundation plantings and specimen plants, if pruned each year.

There are many other useful and ornamental trees. Some of these are:

Native Persimmon	Standard Apple	Locust
Sassafras	Sourwood	Horsechestnut
Weeping Willow	Ailanthus	Native Pines
Magnolia	Beech	Many Oaks
Crab Apple	Sweet Gum	Pecan
Mountain Ash	Black Gum	Hickory

References

- F. B. 1726 — Treatment and Care of Tree Wounds.
- F. B. 1693 — Growing Christmas Holly on the Farm.
- F. B. 1591 — Transplanting Trees and Shrubs.
- F. B. 1567 — Propagation of Trees and Shrubs.
- F. B. 788 — The Windbreak on the Farm.
- F. B. 1123 — Growing Hardwood Seedlings.
- F. B. 1169 — Insects Injurious to Deciduous Trees.
- F. B. 1628 — Growing Black Locust Trees.
- F. B. 1517 — Loblolly Pine Primer.
- F. B. 1501 — Nut Tree Propagation.
- F. B. 1482 — Trees for Roadside Planting.
- F. B. 1392 — Black Walnut for Timber and Nuts.
- F. B. 1364 — Pecan Insects and their Control.
- F. B. 1209 — Planting and Care of Street Trees.
- F. B. 1208 — Trees for Town and City.

CHAPTER X
PRUNING AND SPRAYING

Pruning

There are always some plants around the home that need attention to keep them up to their best. They may grow for twenty years without any care and still be alive, but quite ugly. This is especially true of certain evergreens.

A young arborvitae, planted by the nurserymen, is compact, nicely shaped and has a fine color. After ten years of neglect the same plant is tall, ragged, with bare spots in the foliage.

There is only one way for 4-H club members to prevent such a thing from happening: give the trees and shrubs some care when the care is most needed.

Every spring the arborvitae, junipers, and some others which are planted close to buildings, should be gone over with a knife and all long tips cut out. Whenever a branch takes an upright direction, cut it out 6 inches inside the tree. Then shear or clip the whole plant to the desired shape.

Hemlocks should be given the same treatment, provided they are to remain small. By nature they are trees. Nothing but regular pruning and shearing can make them remain as shrubs.

Some cedars may be trimmed as columns or globes. Others spread horizontally but will grow into an unwieldy mass unless pruned once a year.

Deciduous trees such as maples and oaks sometimes need to have a crowded limb removed or a dead branch cut off. Whenever this is done the limb should be cut close to the trunk so the wound can heal. Wounds heal more quickly if they are painted to prevent drying and rotting.

Plants to be pruned and sheared in early spring, if pruned at all:

Arborvitae	Cryptomeria
Junipers	Yew (for hedges and small specimens)
Retinospora	Holly (sufficient to maintain shape)
Hemlock (for hedges and small specimens)	Boxwood
	Roses (bush and shrub type)

Shrubs that should be pruned just after the flowering season:

Forsythia (golden bell)	Syringa (lilac)
Jasminum (jasmine)	Tamarix
Spirea (early sorts)	Salix (pussy willow)
Rose (early ramblers)	

Shrubs that should be pruned in late winter :

Abelia	Crataegus (Hawthorn)
Althea	Cydonia (Japanese quince)
Barberry	Deutzia
Buddleia (butterfly bush)	Cytisus (Scotch broom)
Callicarpa	Hydrangea (Peegee)
Calycanthus (sweet shrub)	Elaeagnus
Pyracantha (fire thorn)	Prunus (flowering almond)
Cotoneaster	Rhamnus (Carolina buckthorn)
Nandina	Sambucus (American elder)
Ilex (evergreen holly)	Rhodotypos (white kerria)
Ilex verticillata (deciduous holly)	Spirea (late blooming)
Kerria (crocus rose)	Symphoricarpos (snowberry)
Kolkwitzia (beauty bush)	Virburnum (snowball)
Lonicera (bush honeysuckle)	Weigela
Philadelphus (mock orange)	

Spraying and Dusting

There are many insects and diseases to combat on flowers and ornamental plants. The following table gives the information most commonly needed for home plantings.

Most insecticides are poisonous. Handle them with care.

Pest	Plants affected	Material	Remarks
Beetles (Including larvae of butterflies, etc.)	Annuals, perennials, roses, trees.	Derris or arsenic	This is a very large group of chewing insects. Arsenic will kill many. Rotenone or derris is effective with others.
Aphis	Tender parts of all plants	Nicotine with soap	These are sucking insects and must be struck with the spray. Nicotine is more effective when applied on a warm quiet day.
Bugs	Tender parts of leaves and stems	Derris (Rotenone)	The Stinking Jim and Harlequin Cabbage bug belong to this group. They suck their food like aphis.
Red Spiders (Mites)	Green foliage of most plants. Junipers, boxwood, etc.	Dusting sulphur, water, soapy water, oil emulsion	Mites usually thrive in dry, hot seasons. They stay under the leaves. Water under high pressure may wash them off. Evergreens may be dusted with "dusting" sulphur when the foliage is dry. Shake plants to remove excess. Several treatments of oil emulsion diluted to contain one percent oil may be used.
Slug, cutworms	Many	Paris green No. 5 or poison mash	These are often spoken of as snails. Slugs have no shells. Usually feed at night. Place the poison on dry chips or along the brick borders.
Earth worms		Lime, corrosive sublimate	Often found in flower boxes and pots and in greenhouse benches, where they work the ground into a paste. May be driven out or killed with weak lime water or standard solution of corrosive sublimate.
Stem Borers	Many		Found in the stems of flowers and vegetables. May be cut out in rare cases. Best control lies in cleaning up the garden every year.

Pest	Plants affected	Material	Remarks
Nematode	Many		This is a microscopic worm which lives inside the roots and stems of plants. Multiplies rapidly. Soil must be burned, steamed or heated with hot water to 140° to kill them. Burn infested plants.
White Grubs	Lawn grasses and many plants	Arsenate of lead, Paris green Nos. 3 and 4	The white grub is the larvae of a large beetle. They are white in color, large, and contain a head. There is no satisfactory remedy for white grubs in flower beds. They may be destroyed in the greenhouse by heating, and in the lawns by the application of arsenate of lead, 5 pounds per 1000 cubic feet. Mix arsenate with dry sand. Three applications may be necessary. Do not combine the arsenate with lime, inorganic fertilizers or grass seed.
Thrips	Flowers and foliage of many plants	Derris, arsenic Nos. 3 and 4	Moist conditions at night tend to prevent development. Very difficult to poison. Spray before the flowers open or after they are cut.
Soft Scale	Euonymus and others	Lime-sulphur, oil emulsion	It is usually best to burn the euonymus, when badly infested. Summer strength lime-sulphur may be used. For dormant trees without foliage, winter strength is best. Euonymus plants may be sprayed during the winter season with oil emulsion diluted to contain one percent oil.
Moles	Lawn and garden	Traps	Ask for bulletin. Moles do not eat plants and are usually regarded as beneficial in that they eat insects. They injure plants by breaking roots and causing the soil to dry out.
Ants			Ants are attracted to plants by the honeydew secreted by aphids, mealybug, etc. All that is necessary, in such cases, is to get rid of the sucking insects and the ants will leave.
Black-spot and other diseases	Rose	Soap bordeaux, dusting sulphur	This disease, as well as others, can be made less destructive by cleaning up around the roses in the fall and giving them a winter spray of lime-sulphur. During the growing season spray with soap bordeaux or dust with "dusting" sulphur frequently.
Mildew	Rose, phlox, columbine, and others	Dusting sulphur	Roses that mildew each year may be thrown away and more resistant varieties planted. Phlox should be dusted before the mildew starts.
Rust	Snapdragons, hollyhocks, crabapples, Japanese quince, and others	None	Use rust-resistant snapdragons. Dig up weeds that carry hollyhock rust. Prevent formation of cedar apples in neighborhood to protect apples, etc.
Stem and bulb rots	Delphinium, lilies, others		Caused by many different organisms. The use of manure often increases the chance of such rots. No cure for affected plants.
Wilt	Many flowers, maples, and elms		The wilt organisms grow inside the plant tissues. Resistant varieties and clean soil only remedy for flowers. Some trees may be saved by cutting out affected parts.
Gladiolus scab	Corms	Corrosive sublimate	Soak bulbs in standard solution for 1½ hours before planting.
Damping-off	Seedlings	Formalin, heating soil, seed treatment.	Careful watering. Ventilation and cultivation. Use of fresh soil.

Arsenic (Very poisonous)

Formula No. 1

Small Lots	Large Quantity	
10 teaspoons	2 lbs.	Arsenate lead
1 gal.	50 gals.	Water

Formula No. 2

Small Lots	Large Quantity	
1 teaspoon	5 oz.	Paris green
3 gals.	50 gals.	Water
4½ oz.	1½ lbs.	Hydrated lime

Formula No. 3 (for thrips on roses, etc.)

2 level tablespoons	Paris green
3 gals.	Water
½ lb.	Brown sugar

Formula No. 4 (for gladiolus thrips)

2 level tablespoons	Paris green
3 gals.	Water
2 lbs.	Brown sugar

Formula No. 5 (for slugs)

Quantity desired	Brown sugar
Enough to color	Paris green
Moisten	Water

Dusting Sulphur (Poisonous)

A very fine form of sulphur. Frequently contains arsenate of lead. Should be applied when foliage is dry and the air fairly still.

The common "flowers of sulphur" usually found at drug stores is not good for dusting.

Oil Emulsion

Oil emulsion made by emulsifying certain grades of engine oil. Used for spraying trees and shrubs during the dormant season for the control of various kinds of scales. May be purchased from dealers in seed and spraying supplies.

Spray Mixture for Roses (Bordeaux)

1½ oz. copper sulphate (powdered)
2 oz. hydrated lime
1½ oz. arsenate of lead
6 teaspoonfuls Blackleaf 40
1 tablespoon household ammonia
1 pt. skimmed sweet milk
Enough water to make 3 gallons spray

Put 2 gallons of water in container and add materials in the order named. Stir while mixing. Add water to make 3 gallons.

Mix spray as needed. Do not try to save for future use.

Leave arsenate of lead or nicotine out of spray when there are no leaf-eating insects or plant lice to kill.

Three ounces of soap (dissolved in water) may be used in place of ammonia and milk.

Nicotine (Poisonous)

Sold as Black Leaf 40. Mix as directed on package. The addition of mild soap makes the spray more effective.

Tobacco water may be made where stems or tobacco leaves are available. Soak the tobacco in warm water over night. Add 2 ounces non-caustic soap to 3 gallons of spray.

Corrosive Sublimate (Very poisonous)

For seed treatment—standard solution 1 to 1000

1 oz. corrosive sublimate
8 gals. water

Dissolve in warm water. Mix in wood or glass.

Formalin (Poisonous)

For seed bed treatment before seed are planted

1 gal. 40% Formaldehyde
50 gals. water

Pour uniformly over seed bed using ½ to 1 gallon to each square foot. Cover with paper for 24 hours. After soil gets dry enough, stir to allow gas to escape. Sow seed after 7 or 10 days.

Derris Compounds

As a spray:

2 oz. derris, containing 4 to 5 percent Rotenone
3 gals. water

Note: 5 level tablespoonfuls equals 1 ounce.

As a dust:

Derris, containing less than 1 percent Rotenone.
Apply without further dilution.

Poison Bran Mash

Bran ----- 5 lbs.
Paris green ----- 4 ozs.
Molasses ----- 1 pt.
Water to moisten

Most Insecticides are Poisonous. Handle them with Care.

References

- F. B. 1569 — Earthworms as Pests and Otherwise.
- F. B. 1495 — Insect Enemies of the Flower Garden.
- F. B. 1362 — Insects Injurious to Ornamental Plants.
- F. B. 1306 — Insect Enemies of Chrysanthemums.
- F. B. 959 — Spotted Garden Slug.
- F. B. 940 — Common White Grubs.
- Virginia Extension Bulletin 131—Spray Calendar.



GERMAN IRIS