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## Finding the Right Lender

In any good relationship, both parties are looking for something. The relationship should be win-win. To achieve this, look at both sides of the lender – client relationship.

As the client, view prospective lenders like a business partner. Determine what attributes are valuable - trustworthiness, experience, knowledge, integrity, resourcefulness? Consider the ability and ease of working together. This connection is especially strong in the agriculture sector as can be noted by the number of producers who are loyal to a lender and not an institution.

Consider the following factors when searching for the right lender.

First, can the lender meet the loan needs? Find out the limits and factor in a reasonable growth rate.

Second, look for a balance between competitive interest rates, flexible terms, and possible other financial services like investment or insurance products.

Third, look for stability in both a loan officer and an institution that knows the industry.

Fourth, find out who has authority to make the final loan decision. Most producers prefer to do business face-to-face.

Fifth, inquire about the timing of a loan or is a draw account available to avoid long delays that may impede business operations. To speed up the process, be prepared to provide an updated balance sheet, cash flow, income statement and tax returns.

On the flipside, the lender will be looking at the five C's of credit. These are character, capacity, collateral, capital, and conditions.

Character includes credit score, work history and business reputation. Credit scores should be checked annually. A good score can be used to negotiate better loan terms.

Capacity is the ability to pay back the loan. Lenders may run a current ratio or debt to asset calculation to determine this. Lenders will look at all sources of income and expenses. Tax records are commonly used in this determination.

Collateral is security. Most lenders do very little unsecured lending. Lenders prefer to have a first position on assets, but will sometimes take a second position after the first lender on an asset such as land, livestock, or equipment.

Capital requests should be realistic and in line with current market prices. Often an appraisal is done either by the bank or an outside entity. In some cases, the loan officer makes this determination, so this is another reason to be sure the lender understands the industry.

Conditions include the loan terms, interest rate and payment structure.

Financing is an integral part of agriculture. Choosing a lender to meet the farm business financial needs is an important decision. Shop around for the right individual and the right institution. Look for someone to build an open, lasting, and professional relationship.

**Source:** *Darla Campbell, ag business specialist*

## Whitefly Control in High Tunnel Tomatoes

Whiteflies are a common pest of concern for both field-grown and high-tunnel grown tomatoes. These insects are in the order Hemiptera, also known as true bugs. Whitefly adults lay eggs that go through several nymph stages before becoming adults. In protected environment structures like high-tunnels and greenhouses, these pests can complete a lifecycle in as little as three weeks. The three major whiteflies of concern in Missouri are the greenhouse whitefly, the sweet potato whitefly and the silver leaf whitefly.

These insects cannot survive Missouri's winters, so rolling up high tunnel sides and having a crop-free period during the winter months can help ensure these pests do not overwinter in protected structures. Whiteflies feed on the sugary sap of plants by inserting their piercing/sucking mouthparts into the phloem of plant tissues. Feeding causes an overall reduction in plant vigor and can also cause symptom such as leaf yellowing and development of sooty mold which grows on the honeydew secreted by whiteflies. Whitefly damage can also cause irregular fruit ripening and this insect can serve as a vector for viral diseases.

Within 2-3 generations, a complete infestation of a high tunnel can occur. Plant scouting and monitoring using yellow sticky cards are essential to prevent severe infestations and outbreak from occurring. It is recommended that at a minimum four yellow sticky cards per 1000 square feet of high tunnel space be used. Yellow sticky cards should also be placed near doors and sidewalls where whiteflies are likely to enter the structure. Although no action thresholds have been developed for high tunnels, greenhouse action thresholds are 0.5 whiteflies per sticky card for young crops and two whiteflies per sticky card for mature crops.

As with management of any insect pest, an integrated pest management approach is recommended. Proper monitoring can assist in the timing of control measures. Growing and/or purchasing clean transplants, and controlling whiteflies on transplants before they are set in the high tunnel, are key practices for prevention. Although natural enemies like lacewing and ladybeetle larvae prey on whiteflies, predation rarely offers effective control of this pest.

The Midwest Vegetable Production guide offers a full list of pesticide options available for whitefly control. Some products such as imidacloprid (e.g., Admire Pro) can be used as a soil drench or a foliar spray. If used as a soil drench these products have a 21-day pre-harvest interval and would only be appropriate for early stages of crop growth. When used as a foliar spray these products have a 0-day pre-harvest interval. Pyrethrins such as bifenthrin may also be used as a foliar spray but

complete coverage of leaf surfaces is critical as whiteflies often are found on the underside of leaves.

Organic control options are also available for whitefly control in tomatoes. Products such as Pyganic, Azadirachtin and insecticidal soaps may be used to control whitefly. Complete foliar coverage is critical for effectiveness of these products. *Beauveria bassiana* is an entomopathogenic fungi that has shown strong effectiveness against whitefly populations, control takes several days from application to whitefly infection and death. Purchased biological control agents, such as the parasitic wasp *Encarsia formosa*, have shown to offer effective whitefly control in greenhouses, but effectiveness is not as well understood in high tunnel production systems. With any pesticide application, be sure to read the label thoroughly for potential phytotoxic effects and application restrictions related to pollinator protection. Certified organic farms should always check with the certifier before using pesticides not currently listed in their annual Organic Systems Plan.

**Source:** *Justin Keay, commercial horticulture specialist*



## Personal Protective Equipment for Working with Pesticides

Pesticides can enter into the human body through four main ways: by mouth, by inhalation, by contact with the skin and through the eyes. In pesticide handling situations, skin is the most exposed part of the body. About 97 percent of human exposure to pesticides during spraying occurs through skin contact. To prevent exposure to pesticides, applicators should wear protective clothing and personal protective equipment (PPE). Every pesticide product label contains specific information about necessary clothing and equipment to be worn while mixing, loading, and applying that product. This information may be found in the "Precautionary Statements" section of the label. The label is the law; read it and wear the appropriate protective equipment. For more detailed information about chemical and physical hazards associated with a specific pesticide, read the Safety Data Sheet (SDS) for that product. The SDS is available from the pesticide dealer. During pesticide handling and application, the individual should use appropriate gloves, body protection, footwear, eye and face protection, head protection and respiratory protection equipment.

### Gloves

Pesticide labels generally specify the type of gloves needed. It is recommended to use chemical-resistant unlined gloves during pesticide handling and application. Cotton, leather, and canvas gloves do not provide protection when handling and applying pesticides.

## Body protection

When only the front of the body needs protection, the pesticide label will state that a chemical-resistant apron should be worn when mixing, loading, and cleaning equipment. For some products, an apron is required in addition to other protective clothing to protect against spills. Aprons made up of the chemical-resistant PPE materials are available to purchase. They are more protective than cotton and polyester aprons. Disposable coveralls have become increasingly popular because of their low cost, availability, and ease of use. They should be discarded at the end of each workday.

## Footwear

Some pesticide labels state the only footwear required for applying is "shoes plus socks." Other labels may direct the applicator to wear "chemical-resistant footwear plus socks." Chemical-resistant boots are the most protective footwear. They are made up of natural rubber, which may be coated with polyurethane, polyvinyl chloride, or blends of these materials. Shoe covers can also be used over footwear that is not chemically resistant such as fabric and leather shoes.

## Eye and face protection

Facial and eye contact by pesticides may be more serious than skin and other contacts. In some situations, applicators may be in close proximity to pesticides that present the danger of splash, irritating mists, or dusts. Common sense should determine which type of protective eyewear is appropriate. Excluding the full-face respirator, there are three basic types of protective eyewear: chemical splash goggles, face shields and shielded safety glasses. Safety glasses are used for only when handling the least toxic pesticides. They provide minimal protection. Chemical splash goggles always provide better eye protection than safety glasses. Face shields can be used with safety glasses or goggles when there is likelihood of splashing pesticides.

## Head protection

When applying pesticides overhead, the applicator needs to use chemical-resistant headgear. Commonly used head protection includes hats and hoods. Chemical-resistant hats are made up of chloroprene or polyvinyl chloride. Chemical-resistant hard hats are also available for overhead protection during pesticide application. Hoods may be used to cover head and upper body parts. For pesticide application, use hoods that are coated on both sides with a chemical-resistant substance, such as polyvinyl chloride.

## Respiratory protection

Specific information on choosing the appropriate respirator may be supplied by pesticide labels. Use only respirators approved by the National Institute of Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA). Approved respirators will carry a "TC" number prefix, which signifies they have been tested and certified for a

specific level of protection.

There are two types of respirators: air-purifying and air supplying. Air purifying respirators should be used where there is sufficient oxygen. They remove airborne contaminants as air enters the respirator through chemical cartridges or mechanical filters. The chemical cartridges are filled with activated carbon, which has a very high absorption capacity for gases and vapors. Mechanical filters provide protection by trapping particulate matter in the fibrous filter material. An air supplying respirator supplies an independent source of breathable air and is used in conditions where oxygen is deficient or the applicator is exposed to high concentrations of very toxic pesticides in enclosed areas.

To learn more about personal protective equipment, refer University of Missouri guide #1971 at <https://extension.missouri.edu/publications/g1917>.

Source: *Dhruba Dhakal, agronomy specialist*

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## Gardening Tips for March

March is the beginning of the gardening season in Missouri. From pruning trees to planting cool-season vegetables, there are plenty of garden chores to keep busy. Following are tips.

### Ornamentals

- Trees, shrubs and perennials may be planted as soon as they become available at local nurseries.
- To control iris borer, clean up and destroy the old foliage before new growth begins.
- Fertilize bulbs with a "bulb booster" formulation broadcast over the planting beds. Hose off any granules sticking to the foliage.
- Dormant mail order plants should be unwrapped immediately. Keep the roots from drying out, store in a cool protected spot, and plant as soon as conditions allow.
- Loosen winter mulches from perennials cautiously. Recover plants at night if frost is in the forecast. Clean up beds by removing all weeds and dead foliage at this time.
- Heavy pruning of trees should be complete before growth occurs.
- Seeds of hardy annuals such as larkspur, bachelor's buttons, Shirley and California poppies should be direct sown in the garden now.
- Summer and fall blooming perennials should be divided in spring when the weather warms and soil is workable.
- Apply a balanced fertilizer such as 6-12-12 to perennial beds when new growth appears.
- Apply sulfur to the soils around acid-loving plants such as azaleas, rhododendrons, and dogwoods. Use a granular formulation at the rate of 1/2 pound per 100 square feet.
- Gradually start to pull back mulch from rose bushes. This is best done in late March or even the first part of April, depending on weather.

## Lawns

- Mow lawns low to remove old growth before new growth begins.
- Apply broadleaf herbicides for control of cool-season perennial and annual weeds in late March. Do not apply to areas to be seeded soon.
- Apply controls for wild garlic. It will take several years of annual applications for complete control.
- Thin spots and bare patches in the lawn can be overseeded now.

## Vegetables

- Cultivate weeds and remove the old, dead stalks of last year's growth from the asparagus bed before the new spears emerge.
- Delay planting if the garden soil is too wet. When a ball of soil crumbles easily after being squeezed together, it is dry enough to be safely worked.
- Plant peas, lettuce, radishes, kohlrabi, mustard greens, collards, turnips, Irish potatoes, spinach and onions outdoors.

- Plant beets, carrots, parsley and parsnip seeds outdoors.
- Set out broccoli, cabbage, Brussels sprouts, Chinese cabbage and cauliflower transplants into the garden.
- Start seeds of tomatoes, peppers and eggplants indoors.

## Fruits

- Gradually remove mulch from strawberries as the weather begins to warm.
- Prune apple and pear trees before the buds swell. Burn or destroy all prunings to minimize insect or disease occurrence.
- Prune grapevines. Bleeding causes no injury to the vines. Tie vines to the trellis before the buds swell to prevent bud injury and crop loss.
- Apply dormant oil sprays now. Spray on a dry day when freezing temperatures are not expected.
- Spray peach trees with a fungicide containing chlorothalonil for the control of peach leaf curl disease. Timing of this spray is very important. Do not delay!

*Resource:* Missouri Botanical Garden

**Source:** *Jennifer Schutter, horticulture specialist*