Pruning

Objective: to explain basics of pruning, how, when and why.

Training Materials: Secateurs, loppers, pruning saw, sample plant material, PPE.

Lesson: *Trimming or thinning branches from trees and shrubs is called pruning. It is carried out to improve the health or control the growth of a plant. Pruning is also done to prevent safety hazards, such as removing tree limbs that overhang a house, or removing a weak, narrow crotch.*

Three pruning techniques are called Heading Back and Thinning Out and Cleaning.

Heading Back cuts back a portion of a branch to the bud. This stimulates a bushy and compact re-growth.

Thinning Out removes the branch resulting in a longer growth for the remaining branches.

Cleaning removes branches that are dead, diseased, dying or crossing in the crown of a tree.

DO

- Prune early flowering shrubs in late spring after flowering.
- Prune summer flowering shrubs early in spring before growth starts.
- Prune evergreens in mid-summer.
- Apply disinfectant to pruning equipment to prevent the spread of disease from plant to plant.
- Cut just to the outside edge of the collar.
- Cut lateral branches back to the branch collar.

Do Not

- Paint pruning wounds. Wounds heal better without pruning paint.
- Cut into the collar. The collar is the slightly raised area at branch connection point and cutting into it slows the sealing of the pruning wound.
- Leave a branch stub, this can begin to rot and become a portal for disease
- Prune trees that bleed sap (birch, walnut, maple) in Spring. Prune in mid-summer to reduce bleeding.
- Remove more than one-third of old wood in one year. Removing too much growth at one time promotes excessive stem regrowth.

• Trimming or thinning branches from trees and shrubs is called pruning. It is carried out to improve the health or control the growth of a plant.

• Remember pruning tools are designed to cut wood, and can just as easily cut flesh and bone.

Mowing

Objective: to instruct crew members in the safe and efficient operation of lawn mowers.

Training Materials: Different mowers (riding, walk behind), operator manuals.

Personal Protective Equipment: hard hat, eye protection, gloves, hearing protection, gloves, safety vest (if working near the road), long pants and boots.

Lesson: *Before starting the mower check that the spark plug is connected, the engine filter is clean and the gas tank and oil reservoir are full.*

Before mowing walk the entire area, checking for debris and watching for irrigation heads that are too high.

Avoid refueling over a grassy area. Never smoke while operating or refueling equipment. Turn off the engine and let it cool before refueling. Stow gasoline safely on trucks or trailers with lids tightly secured.

Disable the engine by disconnecting the spark plug before making adjustments, repairs, or unclogging the discharge chute.

Use caution when mowing wet grass which can make lawns slippery and clog the chute.

For a professional look, mow in straight, long lines. Vary mowing patterns each visit to reduce compaction and grain.

Mowing height is determined by grass type but never cut more than 1/3 of the leaf at a time, which will place stress on the turf.

Do not leave large amounts of clippings or rows of clippings as it will kill the grass beneath. Use a blower or rake to spread out thick areas

On Hillsides:

- Mow horizontally with walk behind mowers to prevent slipping and the mower rolling away from or on top of you

- Mow vertically (up and down the hill) when using a riding mower to prevent roll overs. Hills with a slope greater than 30 degrees should be cut with a walk-behind mower.

- *Before mowing walk the entire area, checking for debris and watching for irrigation heads that are too high.*

- *Watch that the discharge chute does not point toward another crew member or passerby, stones and debris can be flung out at over 100 km/hr by the mower blades.*

Fertilizer Application

Objective: to explain and demonstrate the correct way to apply lawn fertilizer.

Training Materials: fertilizer samples, broadcast spreader, sprayer, drop spreader, PPE.

Lesson: *There are several types of fertilizer spreaders: Broadcast spreader holds fertilizer in a hopper, where it drops down onto a spinner and is broadcast over a wide area in each pass. Broadcast spreaders may be hand-held (for small areas), walk-behind or motorized for large areas.*

Drop spreader also holds fertilizer in a hopper, where it drops straight down through an opening in the bottom. The opening can be adjusted to apply different rates of fertilizer. A drop spreader only covers an area as wide as the spreader, so more passes are needed.

Liquid fertilizers are applied with a sprayer. Liquid applications should be avoided during windy conditions, as it will result in uneven application.

To get an even application, spread the fertilizer in two passes over the lawn (at right angles to each other), using one-half the recommended rate both times. This will avoid uneven streaks in the lawn as the grass colours.

Granular spreaders should be filled on a paved area in case the product spills. Make sure the spreader is closed before filling. Make sure the fertilizer spreader is moving before opening the bottom of the hopper. When using a granular fertilizer, follow the watering instructions on the product package.

Calibrating a spreader will let you know how much product is actually applied over a measured area.

1. Read the product label and the spreader's product manual. Set the spreader opening at the recommended rate.
2. Measure and mark off an area of lawn, for a drop spreader an area of 50 m^2 is fine. To calibrate a broadcast spreader, use 100 m^2.
3. Weigh a quantity of the fertilizer and add it to the hopper.
4. Apply the product to measured area, using two passes at right angles to each other.
5. Weigh the remaining product in the hopper and determine how much fertilizer was applied.
6. Calculate the application rate in kg per 50 m^2. Compare this with the recommended rate, and adjust the opening in the hopper accordingly.

Spreader Maintenance:
Always read the product label for cleanup instructions and wear appropriate PPE while cleaning the spreader.

1. Return any remaining product back to the original packaging.
2. Place the spreader on a lawn area for cleaning.
3. Remove any debris from the openings
4. Rinse well with a garden hose.
5. Lubricate moving parts.

- *Always read the product label for cleanup instructions and wear appropriate PPE while cleaning the spreader.*

- *Calibrating a spreader will let you know how much product is actually applied over a measured area.*

Dethatching

Objective: to familiarize crew members with the theory and safe operation of a dethatcher.

Training Materials: dethatcher or power rake, operator's manual, core sampler.

Personal Protective Equipment: work boots, eye protection, ear protection, gloves, long pants.

Lesson: *Thatch is the build up of grass clippings and other organic debris at the soil surface. A thin layer of thatch (6 mm) is necessary in a healthy lawn, but can build up to become an impenetrable mass that repels water and harbours insects and pests. The organic matter in thatch also ties up nutrients and horticultural products applied to the turf. Turfgrass roots can grow out of the soil and up into a thick layer of thatch, leaving them extremely vulnerable in event of a drought.*

If this is the case, dethatching, or using a power rake to deeply rake and remove the thatch layer is recommended. A dethatcher is a vertical mower with lots of short blades that slice thinly into the soil and tear up the thatch layer.

Turf should be dethatched in early spring or fall when the thatch exceeds 1.2 cm in thickness. The grass plants need time to repair themselves before the onset of temperature extremes. Never dethatch during the high heat of summer or in times of drought.

A core sampler is a tool to help determine the depth of the thatch layer.

Dethatching

1. Allow turf to dry out before dethatching.

2. Mow the turf grass to half its normal height.

3. Adjust blade depth on power dethatcher so that it barely cuts into the soil and dethatch the lawn in several passes at 90 degree angles.

4. Rake and remove the thatch from the lawn.

5. Water turf well.

6. Apply fertilizer and seed if needed.

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• *Turf should be dethatched in early spring or fall when the thatch exceeds 1.2 cm in thickness.*

Fertilizer

Objective: to explain the elements and timing of fertilizer.

Training Materials: sample fertilizers, PPE.

Lesson: *Fertilizer consists of three macro-nutrients and many micro-nutrients. The macro-elements are Nitrogen (N), Phosphorous(P) and Potassium (K).*

N is needed for top growth in plants and is responsible for the green colour of leaves. Nitrogen is required in larger amounts than the other two macro-nutrients.
P is required for healthy root growth and to promote development of flowers.
K helps plants use N and P and provides resilience against stress caused by drought, disease and wear and tear.
Micro-nutrients include calcium, magnesium, iron, manganese, boron, zinc and other elements needed for healthy plant growth in small amounts.

Fertilizer is usually labeled with numbers that identify the percentage of each of the macro-nutrients. For example, a lawn fertilizer with 21-3-9 contains 21 percent N, 3 per cent P and 9 percent K. The rest of the contents are inert materials used to help with the distribution or time-release of the fertilizer nutrients.

There are many different ratios of fertilizer that are used to address specific nutrient needs. For example, a fertilizer to encourage plants to flower has a 15-30-15 formulation, as phosphorous (P) is needed for flowering. A turf starter fertilizer might have a 10-25-10 formulation, high in phosphorous to help develop strong root growth.

Recent research shows the best time to apply fertilizer to turf is in early autumn, just as the grass plants begin their fall growth flush. The turf plants use the nutrients to strengthen themselves for the winter and store enough nutrients for the early spring flush of growth.

The next best time to apply fertilizer is just after the spring growth flush (mid-May to mid-June, depending on where you live). High levels of nitrogen applied too close to the summer dry period encourages lush, watery growth that is easily stressed in summer heat and drought.

An early spring fertilizer application is recommended on young turf (planted last season) or where the grass has a lot of winter injury.

- *Fertilizer frequency and rates depend on whether the turf is irrigated regularly, the type of soil and the amount of use the surface is subject to.*

- *Recent research shows the best time to apply fertilizer to turf is in early autumn, just as the grass plants begin their fall growth flush.*