

Welcome.

This *Pocket Guide* is a resource to help you answer common – and not so common - rural living questions. From measurements to livestock needs, this guide is a handy and portable addition to your information arsenal.

The *Pocket Guide* is a project of the Clackamas County Soil and Water Conservation District (Conservation District). The *Pocket Guide* is a companion piece to the full handbook, *Rural Lifestyles*. A copy of *Rural Lifestyles* may be viewed and ordered at www.conservationdistrict.org.

The Conservation District's professional staff members provide conservation advice and technical services to Clackamas County landowners and local community partners to sustain the area's soils, water, land, air and energy resources.

The Conservation District's project work focuses on making the county a place where our communities, environments and economy thrive together. These projects improve regional watersheds, the food/agriculture economy (foodshed), value-added forest products industry (woodshed) and the local production of renewable energy (energyshed).

For more information, visit the Conservation District's Web site at www.conservationdistrict.org or call 503-656-3499.

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Fahrenheit/Celsius Comparison

To find °C: $(°F - 32) \times \frac{5}{9}$ (.56)

EXAMPLE: $52 °F - 32 = 20 \times .56 = 11.20 °C$

To find °F: $(°C \times \frac{9}{5}\{1.8\}) + 32$

EXAMPLE: $11.20 °C \times 1.80 = 20.16 + 32 = 52 °F$

Common Measures

Length:

12 inches = 1 foot

3 feet = 1 yard

5 ½ yards (16.5 feet) = 1 rod

320 rods = 1 mile

1 mile = 5,280 feet

Area:

144 square inches = 1 square foot

9 square feet = 1 square yard

30 ¼ square yards = 1 square rod

160 square rods = 1 acre

4,840 square yards = 1 acre

43,560 square feet = 1 acre

640 acres = 1 square mile

An acre is equal to a square whose side is 208.71 feet

Volume:

1,728 cubic inches = 1 cubic foot

27 cubic feet = 1 cubic yard

128 cubic feet = 1 cord

Dry Measure:

8 quarts = 1 peck

4 pecks = 1 bushel

1 bushel contains 2,150.42 cubic inches or
approximately $1 \frac{1}{4}$ cubic feet

Liquid Measure:

2 pints = 1 quart

4 quarts = 1 gallon

1 gallon contains 231 cubic inches

1 cubic foot equals $7 \frac{1}{2}$ gallons

Farm Formulas:

Area of a circle = radius squared x 3.1416 or diameter squared x .7854

Area of a rectangle or square = length x width

Area of a right triangle = (base x height) divided by 2

Area of other triangle = (base x height
{at right angle to base}) divided by 2

Volume of a cube or rectangular box =
length x width x height

Volume of a cone = radius squared x 1.0472 x height

Volume of a cylinder = 3.146 x
(radius x radius) x height

Rules for Measurement:

To find diameter of a circle, divide circumference by 3.14

To find circumference of a circle, multiply diameter by 3.14

To find area of a circle, multiply square of diameter by 0.7854

To find surface of a ball, or sphere, multiply square of diameter by 3.1416

To find volume of a ball, or sphere, multiply cube of diameter by 0.5236

To find area of a triangle, multiply the perpendicular height times the base and divide by two

Rectangular Bodies are reduced to cubic feet or inches by multiplying the length x width x height. Thus a bin 8 ft. long, 5 ft. wide, and 4 ft. high contains $8 \times 5 \times 4 = 160$ cubic feet.

Cylindrical Bodies are reduced to cylinder feet or inches by multiplying the square of the diameter by the depth. They are reduced to cubic feet by multiplying the cylindrical feet by 0.7854. Thus a tank, diameter 5 ft., depth 4 ft., contains $5^2 \times 4 = 100$ cylindrical feet; and $100 \times .7854 = 78 \frac{1}{2}$ cubic feet.

Miscellaneous Equivalents:

A pint is approximately one lb. of water, wheat, butter, sugar or blackberries

1 gal. of water weighs about $8 \frac{1}{3}$ lbs

1 gal. milk weighs about 8.6 lbs

1 gal. cream weighs about 8.4 lbs

$46 \frac{1}{2}$ qts. of milk weighs about 100 lbs

1 cu. ft. of water weighs 62 ½ lbs., equals 7 ½ gals

1 gal. kerosene weighs about 6 ½ lbs

1 horsepower (hp.) is equivalent to raising
33,000 lbs. 1 ft. per minute

4 in. equals 1 hand in measuring horses

9 in. equals 1 span

6 ft. equals 1 fathom

6,080 ft. equals 1 nautical mile

1 board ft. equals 144 cu. in

1 cylindrical ft. contains 5 ⅞ gals

1 cu. ft. equals .8 bushel

12 dozen (doz.) equals 1 gross (gr.)

**Weight/Bushel (lb.) Example: 48 pounds of
apples is one bushel**

Apples	48	Millet	32
Barley	48	Oats	32
Beans (White)	50	Onions	56
Beans (Soy)	60	Peaches (Fresh)	48
Bran	20	Peas (Dried)	60
Buckwheat	48	Potatoes	60
Cherries	40	Potatoes (Sweet)	50
Corn (Shelled)	56	Rice (In Rough)	45
Corn (Ear)	70	Rye	56
Cornmeal	50	Tomatoes	50
Flax Seed	56	Turnips	55
Grain Sorghum	56	Wheat	60
Grapes	40		

To Figure Cord Wood

A cord of wood is 4 ft. wide, 4 ft. high, and 8 ft. long. It thus contains (4x4x8) 128 cu. ft. To figure cordage, determine cu. ft. of wood in pile or on wagon and divide by 128.

EXAMPLE: How many cords in a load

8 ft. x 2 $\frac{2}{3}$ ft. x 12 ft.?

$8 \times 2 \frac{2}{3} \times 12 = 256; 256 \div 128 = 2$ cords

Equivalency Chart

tsp. = teaspoon

Tbsp. = tablespoon

C. = cup

3 tsp. = 1 Tbsp.

2 Tbsp. = $\frac{1}{8}$ C.

4 Tbsp. = $\frac{1}{4}$ C.

16 Tbsp. = 1 C.

5 Tbsp. + 1 tsp. = $\frac{1}{3}$ C.

4 oz. = $\frac{1}{2}$ C.

8 oz. = 1 C.

16 oz. = 1 lb.

1 oz. = 2 Tbsp. fat or liquid

1 c. of liquid = $\frac{1}{2}$ pt.

2 c. = 1 pt.

2 pt. = 1 qt.

4 c. of liquid = 1 qt.

1 qt. = 4 C.

4 qts. = 1 gallon

8 qts. = 1 peck (*such as apples, pears, etc.*)

Livestock Incubation and Gestation Periods

Incubation

(from laying to hatching)

Chickens	21 days
Ducks	30 days
Guineas	28 days
Geese	30 days
Pheasants	25 days
Pigeons	21 days
Swan	42 days
Turkeys	28 days

Gestation

(period of pregnancy)

Bear	6 Months
Bitch (Dog)	9 Weeks
Cow	9 Months
Cat	8 Weeks
Deer	8 Months
Goat	5 Months
Guinea Pig	21 Days
Mare (Horse)	11 Months
Mule	12 Months
Opossum	26 Days
Rabbit	30 Days
Sheep	5 Months
Sow (Pig)	16 Weeks
Squirrels & Rats	28 Days
Wolf & Fox	62 Days

Water Requirements of Animals

Note: These are estimates

The following values show the daily minimums for a water system. Hot weather can more than double water requirements and combining this with less succulent forage can increase consumptions four fold. The system should be able to handle double the intake, but the cost or practicality of a four-times system may be prohibitive. Be sure to have a back-up plan for hot weather situations.

You'll need to know livestock water needs to design the system and determine if your water source is adequate. If large mobs of livestock run together, the large amount of water required will not only tax the delivery system, but also might be greater than your well, spring or pond recharge capacity.

Animal	Gallons Water/Day	Range
Dairy Cow	20	15-25
Beef Cow Pair	15	12-20
Yearling	10	6-14
Horse	10	8-14
Chicken (per 100)	5 ½	5-9
Sheep	2	2-3
Goat	2 ½	2-3

Dressed Weights of Slaughtered Animals

Percentage Live Weight	
Cattle	
Dairy Cows	40-50
Prime Cattle	60 up
Average for Cattle	55
Hogs	
Prime Heavy	82-84
Medium Butchers	78-80
Shipper Hogs	72-76
Sheep	
Wide Range	40-65
Average Lamb	48-52
Chickens	
Cocks	76
Hens	76
Pullets	74

Physiologic Normals for Various Species

	Avg. Temp	Resp. Rate	Pulse
Horse	100.0°F	8-16	30-34
Cattle	101.0°F	10-30	60-70
Sheep	102.3°F	12-20	70-80
Goat	103.8°F	12-20	70-80
Pig	102.5°F	8-18	60-80
Dog	102.0°F	10-30	70-120
Cat	101.5°F	20-30	110-130
Fowl	107.0°F	15-30	200-400

Glossary of Rural Lifestyles Terms

General Livestock Terms

Afterbirth: The placenta and membranes with which the fetus is connected to the mother's uterus. It is expelled following parturition (birth.)

Balanced Ration: A ration which furnishes all the necessary nutrients in the proportions and amounts needed by the animal for normal functioning and growth.

Barren: Sterile, infertile, non-breeder; incapable of producing offspring.

Bloating: Abnormal swelling of the abdomen of livestock, caused by excessive gas formation which can result in death.

Bolus: A soft mass of chewed food.

Breed: A group of animals descended from common ancestry and possessing certain inherited characteristics which distinguish it from any other group. When matings within the breed are made, these characteristics are transmitted to the offspring in a uniform and predictable manner.

Carrying Capacity: The number of animals that a pasture can properly carry or feed for a certain period.

Castration: The removal of male reproductive organs (testicles) to reduce sexual activity and increase fattening of meat animals.

Colostrum: The first milk produced by a female mammal right after parturition. It is thicker and yellow in color than other milk, and contains high levels of vitamins and antibodies.

Concentrate: Feeds high in total digestible nutrients and low in fiber, such as, barley, oats, cottonseed and beet pulp.

Condition: Refers to the amount of flesh (body weight), the quality of the hair coat and the general health of animals.

Crossbreeding: The mating of individuals of two distinct breeds.

Cud: A bolus of regurgitated food that ruminants re-chew.

Cull: Remove from the herd or flock, usually undesirable and/or inefficient (unprofitable) breeding stock that will be sent to slaughter.

Dam: The female parent of an animal.

Easy Keeper: An animal that does well and attains good condition on a minimum of feed.

Foot Rot: A common inflammation occurring between the toes and in the hoofs of sheep and cattle. The symptoms are limping and a swelling above and between the claws.

Freshen: To come into milk production after giving birth.

Gestation Period: Period of pregnancy. In cows, the average period is 281 days; in sheep, the average is 147 days; in swine, the average is 114 days.

Monogastric: Having only one stomach or stomach compartment.

Mouthing: The process of inspecting an animal's teeth (usually sheep and horses) to determine age.

Pink Eye: A disease which attacks the eyes of cattle of all ages. The eye gradually becomes pearl colored and opaque. The eyeball may even rupture, causing blindness.

Ration: The amount of food supplied to an animal for a definite period, usually for a day. The feed allowed for a given animal daily, whether it is fed at one time or in portions at different times. Also, can refer to the ingredients which comprise the daily amount of feed.

Ruminants: Animals having a stomach with several compartments (rumen, reticulum, omasum and abomasum). Their digestive process is more complex than that of animals having a true stomach. Some commonly known ruminants are cattle, sheep and goats; examples of true stomach animals are horses and pigs.

Scours: An infectious disease, similar to diarrhea, common to young animals. It often occurs soon after birth.

Sire: The male parent of an animal.

Zoonoses: Those pathogenic infectious diseases that can be transmitted between vertebrate animals and man.

Cattle

Bovine: Referring to all cattle.

Bull: An uncastrated male of any age.

Calf: A young animal of either sex, under 1 year of age.

Calving: The time when a cow gives birth to a calf. (Also called parturition.)

Carcass: The animal after slaughter, with head, hide, internal organs, and legs below the knee or hocks removed.

Chuck: The major wholesale cut in the forequarter of a beef carcass.

Concentrates: Feeds low in fiber and high in energy or protein; for example, grain is a concentrate.

Conformation: The general structure and shape of an animal.

Cow - A mature female of cattle. Some consider a female that has calved a “Cow.”

Dogie: A stray or motherless calf; an orphan.

Estrous Cycle: Length of time from one heat period to the next; in cattle, 21 days. Heat refers to a period of increased sexual excitement.

Feeder Cattle: Cattle being grown or raised in preparation for the feedlot. Cattle in this stage of growth also are called “stocker” or “backgrounded” cattle. Feeder cattle include both calves and yearlings.

Forage: Generally pasture and/or hay or silage.

Gestation: The period between conception and birth of the young; approximately 283 days for cattle.

Heifer: A female that has not borne an offspring; or, a female that has borne her first calf (first-calf heifer).

Open: A nonpregnant female.

Parturition: The act of birth.

Polled: Naturally or genetically hornless.

Roughages: Feeds such as hay, silage and pasture, which are low in digestible nutrients.

Sire: The father of a calf.

Springer: A heifer or cow showing signs of advanced pregnancy; near to calving.

Steer: A male bovine castrated before sexual maturity.

Tripe: Walls of the cattle stomach (rumen and reticulum) used as human food.

Dairy Cattle

Butterfat: The fat content found in milk.

Dry Cow: A cow that is not producing milk, the rest period before the next calving and lactation.

Freshen: To give birth to a calf and begin a lactation period.

Homogenization: Process in which fat particles of the milk are broken up into such small divisions that they will not rise. They stay evenly spread throughout the milk.

Mastitis: A disease of the cow's udder resulting from infection by microorganisms. The infection may be caused by improper milking procedures or as a result of an injury.

Pasteurization: A process of treatment of milk through heat that kills all harmful bacteria.

Weight of Milk: The conversion of gallons into pounds. One gallon of milk weighs approximately 8.6 pounds.

Sheep

Band: Flock of sheep (or turkeys). Large flocks are often broken up into separate bands for easier handling, such as yearling band, aged band, drop band, etc.

Broken Mouth: A sheep so old that it has begun to lose its incisors.

Bummer Lamb: An orphaned lamb.

Dock: To cut off the tail. This is done for sanitation purposes.

Ewe: A breeding female sheep, any age.

Feeders: Sheep ready to be finished for market, usually 60 to 70 pounds.

Flushing: The practice of giving ewes extra or improved feed about two weeks before the breeding season so they will be gaining weight when rams are turned out with them. This stimulates ovulation which results in a larger percentage of the ewes producing one or more lambs.

Four-Tooth: A two-year old sheep.

Full-Mouth: A sheep four years old or older.

Gummer: A sheep so old that it has lost all of its teeth.

Lamb: A sheep less than one year old.

Mutton: The meat (flesh) from sheep older than one year. Goat meat is called mutton in some countries.

Pelt: The skin and wool from slaughtered sheep.

Shearing: Removal of wool. Sheep may be sheared by hand shears or by machine.

Wether: A male sheep castrated prior to sexual maturity.

Wool: The crimped, serrated covering that grows through and out of the skin of sheep.

Wool

Color: In wool trade usage, this refers to the actual color of the wool; a bright white to cream is most desirable. Specialty colors of wool are gaining popularity.

Crimp: The natural waviness of the wool fiber; it varies with the diameter of the fiber.

Fleece: The wool from a single sheep in the shorn grease state.

Grease Wool: Wool as it is shorn from the sheep, before any processing.

Lanolin: Wool grease; this substance, sometimes called “yolk” is a secretion from the sebaceous glands of the sheep.

Pelt: The skin of the sheep with wool still attached to the skin.

Raw Wool: Grease wool in natural state before scouring.

Scouring: The actual separation of dirt, grease, and foreign matter from grease wool; this is usually done in a lukewarm, mildly alkaline solution, followed by a rinse.

Shearing: The removal of wool from the sheep by the use of power clippers or blade shears.

Swine

Barrow: A castrated young male pig.

Boar: A breeding male hog, any age.

Farrow: Parturition (giving birth) of the pregnant sow.

Feeders: Hogs of various weights ready to be finished for market.

Gilt: Young female hog, usually under 12 months of age.

Hog Off: To put hogs out to pasture on a crop to clean up the field.

Litter: A group of offspring born at the same time by one sow.

Market Hog: Barrow or gilt ready for slaughter, 190 to 240 pounds.

Pig: A young swine weighing less than 120 pounds.

Razorback Pig: A “poor” quality type of swine – long legged, sharp, narrow back, lean body; usually a half-wild mongrel breed.

Runt: Term commonly used to describe a piglet of small size and poor quality, result of genetics and/or lack of milk.

Shoat: A young pig of either sex, usually from weaning up to five months, weighing from 50 to 160 pounds.

Sow: Mature female hog.

Horse

Bronco: Any wild or untamed western horse; unbroken mustang.

Colt: A young horse (male) foal, less than four years of age.

Donkey: (Ass) member of the Horse family - male is Jack; female is Jenny.

Farrier: A horseshoer; one who cares for the hoofs and fits shoes for horses.

Filly: A young female foal, up to maturity.

Floating: Filing off the sharp edges of a horse's teeth.

Foal: A newborn horse (either sex), usually up to weaning age.

Furlong: A running distance of $\frac{1}{8}$ th mile.

Gee: Teamsters' term for signaling a right turn.

Gelding: A male horse that has been castrated before having reached sexual maturity.

Hand: A four inch unit of measurement of the height of horses at the withers (shoulders).

Haw: Teamsters' term signaling a left turn.

Hinny: The offspring of a male horse and a female donkey.

Jack: Male donkey (ass) bred to mares to produce mules.

Jennet/Jenny: Female donkey (ass) bred to a stallion to produce a hinny.

Mare: Mature female horse, three years of age and older

Mule: The hybrid cross of the mating of a Jack and a mare.

Mustang: Wild (native) horse of the Western plains, caught and broken for use as a stockhorse.

Near Side: The left side of a horse.

Neigh: Loud prolonged call (cry) of a horse.

Nicker: The whisper of a horse.

Off Side: The right side of a horse.

Whinny: The gentle, soft cry of a horse.

Poultry

Bare-Back: A chicken not fully feathered, especially on the back. It is the result of genetically poor feathering or feather picking by other birds.

Broiler: A chicken of either sex about eight weeks of age weighing not over 2.5 pounds.

Brooding: The raising of young chickens or turkeys during the first few weeks of life under special, controlled temperature conditions.

Candling: Examining egg for quality and defects by holding it before a bright light.

Capon: Castrated male chicken; lack of male sex characteristics results in faster growth and larger mature size.

Checks: Eggs that have cracked shells.

Coccidiosis: A protozoan affecting the small intestine of birds, causing bleeding and death.

Cockerel: A young male chicken less than one year old.

Fryer: Chicken of either sex from eight to twelve weeks old and weighing 3 to 4 pounds. The terms broiler and fryer are often used interchangeably.

Hen: A mature female chicken.

Layer: A female chicken producing eggs regularly. A good layer should produce between 19 and 20 dozen eggs in 12 months.

Molting: The shedding of feathers by chickens, accompanied by a reduction or ceasing of egg production, for a short period of time.

Poult: A young turkey.

Pullet: A female chicken less than one year old.

Roaster: A young meat bird, twelve to sixteen weeks old weighing four to six pounds, used for pan roasting.

Rooster: A mature male chicken.

Tom: A male turkey.

General Soil and Crops

Acre: A parcel of land, containing 4,840 square yards or 43,560 square feet.

Apiary: Colonies of bees in hives and other beekeeping equipment for the production of honey.

Chlorophyll: The green coloring matter of plants which takes part in the process of photosynthesis.

Cross-Fertilization: Fertilization accomplished by movement of pollen from one plant to another.

Fungicide: A chemical substance used as a spray, dust or disinfectant to kill fungi infesting plants or seeds.

Germination: The beginning of growth from seed. A seed is considered germinated if the seedling is capable of continuing growth independent of the food originally stored in the seed.

Herbicide: Any agent or chemical used in the destruction or control of weeds.

Photosynthesis: A complex physiological process of plant life in which an organic substance (sugar) is made from the carbon dioxide of the air combined with water. This process utilizes energy of light through the agency of chlorophyll.

Pollen: The male germ cells.

Pollination: The transfer of pollen from the anther to the stigma.

Soils

Acid Soil: A soil with an acid reaction, a pH less than 7.0.

Alkali Soil: A soil with an alkali reaction, a pH more than 7.0.

Erosion: The wearing away of the land surface, usually by running water or wind.

Friable Soil: Soil which crumbles easily.

Furrow: A trench made in the earth by a plow or cultivator.

Hardpan: A hardened or cemented soil horizon or layer. The soil material may be sandy or clay-like and may be cemented by iron oxide, silica, calcium carbonate, or other substances.

Humus: The well decomposed, relatively stable portion of the organic matter in a soil.

Leaching: The process of removal of soluble materials by the passage of water through soil.

Soil Texture: Refers to the coarseness or fineness of a soil. It is determined by the relative proportion of various sized particles (sand, silt, and clay) in a soil.

Irrigation

Acre Foot: A unit of volume of water equal to the volume of a prism one foot high with a base one acre in area, 43,560 cubic feet.

Fertilizer

Compost: Organic residues, or a mixture of organic residues and soil which have been piled, moistened, and allowed to undergo biological decomposition. Mineral fertilizers are sometimes added.

Green Manure: Any crop or plant grown and plowed under to improve the soil, by addition of organic matter.

Manure: Generally, the refuse from stables and barnyards including both animal excreta and straw or other litter.

Rhizobium: Bacteria living in nodules on the roots of legume plants that are capable of removing nitrogen from the air and soil “fixing” it into forms that plants utilize for growth.

Top Dressing: Lime, fertilizer, or manure applied after the seedbed is ready, or after the plants are up.

Plants

Biennial: Of two years’ duration. A plant germinating one season and producing seed the next.

Bud: An unexpanded flower or a rudimentary leaf, stem, or branch.

Cover Crop: A crop used to cover the soil surface. It decreases erosion and leaching, shades the ground, and offers protection to the ground from excessive freezing and heaving. The cover crop adds plant residue and, in some cases, nitrogen to the soil.

Crop Rotation: More or less regular recurrent succession of different crops on the same land for the purpose of maintaining good yields.

Double Crop: Two different crops grown on the same area in one growing season.

Forage: Vegetable matter, fresh or preserved, which is gathered and fed to animals as roughage (e.g., alfalfa hay, corn silage, or other hay crops).

Legumes: A type of plant which has nodules formed by bacteria on its roots. The bacteria that compose these nodules take nitrogen from the air and pass it on into the plant for the plant to use. Some legumes are alfalfa, soybeans, clover, and peanuts.

Perennial: Living more than one year, but able to produce seed the first year.

Windrow: Hay or forage raked up in rows to cure.

Trees and Vines

Deciduous Trees: Trees that lose their leaves at the end of the growing season (e.g., walnuts, apricots, peaches).

Dormant: The period between leaf fall and spring when there is no growth in deciduous trees or vines.

Girdling: The act of encircling the stem of a living tree or vine with a cut or cuts that completely sever the bark.

Graft Union: The joining or junction where the top was grafted to the rootstock. This is commonly and easily seen where the English and Black walnuts are grafted.

Grafting: The process of inserting a scion of a specified variety into a stem, root, or branch of another plant so that a permanent union is effected.

Scaffold: A main branch from the tree trunk.

Sucker: The short growth which arises from the root or crown of the tree.

Viticulture: The science and practice of vine growing; grape growing.

Water

Perched Water: Water within a geological constricted basin (rock or clay) that can be withdrawn by pumping faster than it is naturally recharged by rain or snow water. This may lead to well failure in respect to water quantity. May take months to years to become apparent.

Static Water Level: Level of water in a well. Can be reduced by pumping of that well and adjacent wells.

Water Rights: All uses of water in Oregon require a written permit except for exempt purposes. See Oregon Water Resource Department for more information.

Groundwater: Water that seeps into the ground from rainwater and snow melt. Forms the basis of well water use and springs.

Potable Water: Water that is safe to drink without immediate or long term danger. Not all well water is safe to drink without treatment.

Hard Water: This type of water contains a large amount of minerals. It may create problems with taste, color and residue formation on fixtures. Hard water does not lather as easily as soft water.

Pressure Tank: A tank in your well water delivery system that maintains adjustable pressure to the water faucets.

Wellhead Protection: Keeping toxic materials, nutrient and sediment from entering a well. Use of the well house for paint and pesticide storage is a hazard. Intense and/or poor livestock or agricultural management next to a well can affect well water quality.

Septic System: An on-site sewage disposal system.

Grey Water: Water that drains from sinks washing machine, bathtubs and showers. Sometimes used for irrigation. Care needs to be exercised when using grey water for irrigation.

Machinery

Back Hoe: A shovel mounted on the rear of a tractor, hydraulically operated to dig trenches or pits in soil.

Baler: A machine designed to compress hay into compact bundles or bales.

Broadcasting: Random scattering of seeds over the surface of the ground. If the seed is to be covered, this is done as a separate operation, usually with a spike-tooth harrow.

Combine: A machine for harvesting grain. In one operation, it cuts and threshes grain and scatters the straw.

Disk Harrow: A tillage tool consisting of two or more gangs (groups) of concave disk blades set at an angle to the direction of travel. Half of the gangs throw the soil to the left, and the other half to the right.

Disk Plow: A tool with a series of concave disk blades all throwing the soil in the same direction (in contrast with a disk harrow, which moves soil in both directions). On a standard disk plow, the blades are individually mounted.

Drawbar Horsepower: The amount of power developed by a tractor at the drawbar.

Harrow (Spike Tooth): An implement with straight spike-like teeth (not necessarily vertical) that is used for smoothing tilled soil, breaking clods, covering broadcast seeds, and other shallow tillage operations.

Harrow (Spring Tooth): An implement with curved teeth fixed in rows, used to break clods, crust of soil, and clumps of plants.

Hay Conditioner: A device to crimp or crush the cut stem of hay to allow faster drying. It may be an attachment to the mower or a separate piece of equipment.

Power Take-Off: A shaft on a tractor that transmits power to an implement, usually through a connecting shaft that has two or more universal joints and a telescoping reaction. PTO shaft speeds are standardized at either 540 or 1,000 rpm.

Subsoiler: A deep tillage implement with shanks from 20 to 30 inches in length extending into the ground used to break up compacted subsoil. Chiseling is sometimes confused with subsoiling. Chiseling is a tillage operation similar to subsoiling but usually confined to the first six to ten inches of soil.

Swather: Haying equipment designed to cut (mow), condition and windrow hay in a single operation.

Wheel Rake: A hay rake made up of a series of spiked wheels which gather mowed hay and deliver to the windrow at the side of the rake.

Clackamas County Soil and Water Conservation District
www.conservationdistrict.org

OSU Extension Service – Clackamas County
<http://extension.oregonstate.edu/clackamas>

USDA Natural Resources Conservation Service
www.nrcs.usda.gov

OSU Small Farms program
<http://smallfarms.oregonstate.edu>

Oregon Department of Agriculture
www.oregon.gov/oda

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