



The Ag Researcher's Almanac





THE AG RESEARCHER'S ALMANAC

When we look at the U.S. gross domestic product, the agriculture industry is not “small potatoes”. In fact, in 2017, it contributed about \$1.053 trillion or **5.4% to our total GDP** and that total is only expected to grow. This contribution could also be even higher when you consider that many other industries, such as food products, apparel, restaurants, and more, rely on the output of the agriculture industry.

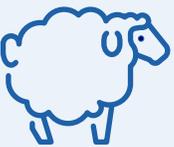
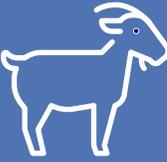
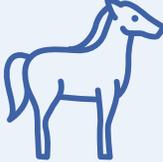
This major industry encompasses all of the small businesses and larger enterprises that are involved in cultivating plants and animals for food, fibers, and fuel. And that's quite a lot of companies! As a researcher in this space, it's important to know more about the specific business categories you'll come across and any particular jargon that can help you connect with this audience.

So if you're a researcher who is new to the agriculture industry or an experienced researcher looking for a glossary of important agriculture industry terms to keep handy, feel free to skip ahead to the section you need most or keep on reading.

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GENERAL AG BUSINESS CATEGORIES & SUBCATEGORIES

Before we dive into any specifics, it's important to get a general understanding of common Ag business categories and any relevant subcategories. As a researcher, your study probably isn't going to cover the Ag industry as a whole. Most times to get credible insight, you'll be searching for an audience in one of these subcategories below:

			
<p>ROW CROPS</p> <ul style="list-style-type: none"> Corn Cotton Soybeans Sweet Corn 	<p>SWINE</p> <ul style="list-style-type: none"> Fattening Hogs Grower Pigs Nursery Pigs Sows Nutritionists Vets 	<p>SPECIALTY CROPS</p> <ul style="list-style-type: none"> Leafy & Stem Vegetables Fruiting Vegetables Cucurbits Citrus Nuts Berries Potatoes 	<p>CATTLE</p> <ul style="list-style-type: none"> Dairy Farm Cow / Calf Feed Operations Stocker / Backgrounder Dairy Replacement Heifers Nutritionists Vets
			
<p>POULTRY</p> <ul style="list-style-type: none"> Breeders / Layers Broilers Turkeys Nutritionists Vets 	<p>SHEEP</p> <ul style="list-style-type: none"> Sheep Producer Nutritionists Vets 	<p>GOATS</p> <ul style="list-style-type: none"> Goat Producer Nutritionists Vets 	<p>EQUINE (HORSE)</p> <ul style="list-style-type: none"> Hoof Trimmers Performance Hobby Trainers
			
<p>RETAILERS</p> <ul style="list-style-type: none"> Dealers / Retailers Grain Elevators Processors Feed Integrators 	<p>CONSUMERS</p>	<p>CEREAL</p>	



COMMON AG TERMINOLOGY

In the Ag industry, there are a lot of common terms that may seem unfamiliar to someone dipping their toes into the industry. First, we'll cover some more general terms you may see in USDA reports and other Ag resources. Then we'll get into more specific terminology involving animals and crops.



Hobby Farm - An Ag operation that does not consider their farm to be their main source of revenue - for instance a "backyard" chicken owner, a person who owns 1-2 horses as pets, etc.

Commercial Farm - An Ag operation that does consider their farm to be their main source of revenue

Staff Nutritionist - A nutritionist that provides decision making and input as to the health of animals on their employer's operation - these are usually employees of large integrator operations such as Tyson, Purdue, etc.

Consulting Nutritionist - A nutritionist that provides decision making and input on the health of animals on their client's operations - these are nutritionists that are independent or work for large animal health clinics that are hired by independent livestock operations

Staff Veterinarian - A veterinarian that provides decision making and input on the health of animals on their employer's operation - these are usually employees of large integrator operations such as Tyson, Purdue, etc.

Consulting Veterinarian - A veterinarian that provides decision making and input on the health of animals on their client's operations - these are nutritionists that are independent or work for large animal health clinics that are hired by independent livestock operations



COMMON AG TERMINOLOGY (continued)

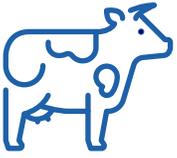
Consultants - A person who provides expert advice professionally on a specific facet of the agriculture industry

Feed Dealers - Companies that sell the food for raising animals

Feed Supply Chain - The sequence of processes involved in the production and distribution of feed for farm animals.

Grower - A person who grows large quantities of a particular plant or crop in order to sell them

Production Credit Association (PCA) - Entities that deliver short or intermediate term loans to farmers and ranchers. Nowadays, PCAs are all subsidiaries of the Agricultural Credit Association



CATTLE

Backgrounder / Stocker - A farmer/rancher who sells cattle around the age of 1 year. Normally buys calves at about 7 months of age and lets them grow until about 1 year of age. Some farmers will not sell their calves that they raised. Sometimes they will keep those calves and background them and then sell as yearlings.

Bovine - Technical term for cattle. 2 types of cattle, beef and dairy

Calf - Usually a young animal under the age of 7 months. Mainly used for cows.

Cow - Female that has had at least one calf. Normally cows will be at least 2 years old, and up to about 12 years old. **Cow-Calf Cattle** - Cattle that are kept in a herd for production of calves, the calves of which are grown to be used as beef cattle later on

Cow-Calf Cattle - Cattle that are kept in a herd for production of calves, the calves of which are grown to be used as beef cattle later on

Dairy - An operation that houses cows for production of milk

Dry / Dry Cow - A dairy cow that is NOT currently being milked, or NOT giving milk

Feedlot / Feed Yard - Type of animal feeding operation (AFO) which is used in factory farming for finishing livestock, notably beef cattle. A very small area where cattle are taken to be fed a lot of feed including high protein feed, so they develop and get fat. When they are fat, they are then slaughtered.

Fat Cattle / Slaughter Cattle - Cattle that are ready to be slaughtered

Heifer - A female bovine that has not yet had a calf. The term can be used separately or in conjunction with other terminology, such as a heifer calf.

Lactation - Normal term used to refer to the period of time a dairy cow is milked in a year. The normal period of time a dairy cow is milked is between 10 to 11 months each year. The rest of the year the cow is said to be dry.

Mammary Tissue - Dairy farmers will refer to a cow's udders, quarters, and teats as mammary tissue. A cow has 1 udder (or bag). An udder is considered to have 4 quarters, and each quarter has a teat.

Stocker Cattle - An operation that holds calves that have been weaned, but aren't large enough to be sent to a feedlot

Steer - Male bovine that has been castrated. Castration has 2 major effects: the animal grows better and is more even tempered.

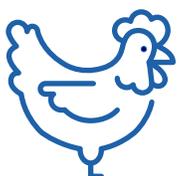


CATTLE (continued)

Weaned / Weaning - In cattle, most calves are weaned at the age of 7 months. Some cows will just stop allowing a calf to suck or nurse after some time. However, most cows will allow their calf to continue to nurse for a longer period of time. Usually to wean a calf or group of calves, the farmer will physically separate the cow and calf. After a cow has not been nursed or milked for several days, she will stop giving or producing milk. Swine pigs are usually weaned between 3 and 5 weeks of age.

Withdrawal Period - Cattle that are slaughtered CANNOT have been given any kind of drugs or medicine for a certain period of time before they are slaughtered. The withdrawal period will vary depending on the type of medicine and the way it is administered. For dairy cattle there is also a milk withdrawal period, which is the time from the last administration of drugs to the time when the milk can be sold for human consumption.

Yearling - Beef animal that is approximately one year old. Can range from about 8 months of age to about 17 to 18 months of age. Some farmers/ranchers will talk about short yearlings that are under a year old, and long yearlings that are older than 1 year of age.



POULTRY

Poultry Broiler - A chicken that is specifically raised for meat production

Poultry Broiler / Breeder - Considered an all-inclusive operation, these operations contain male and female chickens to hatch fertilized eggs which are then sold to hatcheries for birthing and growth

Poultry Hatchery - An operation that specifically hatches and raises chickens under artificial conditions

Poultry Integrator - Integrators hire operations to grow the animals for them - once the chickens are fully grown, the producers are paid and the animals go to final market

Poultry Layer - A chicken that is specifically raised and kept on the operation for egg production



SWINE

Barrow - Castrated male pig

Boar - Adult male pig

Farrow - A litter of piglets

Feeder Pig - Usually used to refer to a pig that weighs less than 50 lbs and/or is less than 8 weeks old.

Gilt - Immature female pig. Often used to refer to a female pig that has not yet given birth to baby pigs.

Growing / Finishing Pigs - Pigs that are being fed to hit the final weight to be sent to market

Nursery Pigs - Pigs that have been weaned but are not yet ready for the final feeding operation stage

Porcine - Technical term for swine or pigs.

Sows - A female pig that is kept on operation to birth piglets for growth and sale

Swine Integrator - Integrators hire operations to grow the animals for them - once the pigs are fully grown, the producers are paid and the animals go to final market



COMMON CROP TERMINOLOGY

Row Crop - A crop that can be grown in straight rows spaced apart from other similar plants (corn, soy, wheat, cotton, etc)

Specialty Crop - A crop that is grown in a smaller scale than row-crops due to the style of growth and seasonal influence - for example most commonly fruits, vegetables, and nuts/seeds.

Fungicide - A chemical that helps control the growth of damaging fungi on crops

Herbicide - A chemical that is toxic to certain plants, most of which are used to control weed growth

Pesticide - The 'umbrella' name for chemicals that control anything that could cause damage to crops - includes insects, fungi, weeds, etc.

Insecticide - A chemical that is specifically targeted to limit insect damage on crops

Acre - One acre = 43,560 sq. ft = 208.7 ft.² = 0.405 hectares; or 640 acres = 1 sq. mile (a section).

Adjuvant - Additives that enhance immune response in herbicides, fungicides, etc.

Agronomy - The science of crop production and soil management.

Band - Strips four to six feet apart



COMMON CROP TERMINOLOGY (Continued)

Basic Commodities - Six crops (corn, cotton, peanuts, rice, tobacco and wheat) that are covered by legislated price support programs.

BMPs - A conservation practice or combination of practices designed to maintain agricultural productivity while reducing point- and nonpoint- source water pollution. State water quality agencies (or their designees) determine BMPs to fit local conditions and to make the most efficient use of natural resources and purchased inputs. The term has been defined as generally recognized farmer management practices designed to reduce or prevent contamination of groundwater and surface water, erosion and runoff from cropland, including the use of conservation tillage, no-till, ridge plating, strip tillage, contour farming, strip cropping, irrigation water management, judicious fertilizer application, slow-release fertilizers, soil and tissue testing and vegetative buffer strips.

Bushel - A dry volume measure of varying weight for grain, fruit, etc., equal to four pecks or eight gallons (2150.42 cubic inches). A bushel of soybeans weighs 60 pounds.

Checkoff Programs - Research and promotion programs authorized by law and financed by assessments. The programs are paid for by specified industry members such as producers, importers and handlers. The United Soybean Board, for example, is funded by a mandatory assessment of 0.5 of 1 percent of the net market price for a bushel of soybeans. Governed by the Agricultural Marketing Service and the United States Department of Agriculture, a producer poll is conducted every 5 years to determine if producers favor the conduct of a continuance referendum.

Cooperative - An enterprise or organization owned by and operated for the benefit of those using its services. In agriculture, such an organization is owned and used by farmers mainly to handle the off-farm part of their businesses — buying farm supplies, marketing their products, furnishing electric and telephone service, and providing business services—at cost. Essential features are democratic control, limited return on capital, and operation at cost, with distribution of financial benefits to individuals in proportion to their use of the services made available by the cooperative (called patronage refunds).

Corn Stalk Lodging - Breakage of the stalk below the ear

Crop Residue - That portion of a plant, such as a corn stalk, left in the field after harvest.



COMMON CROP TERMINOLOGY (Continued)

Crop Rotation - The practice of growing different crops in recurring sessions on the same land. Crop rotation plans are usually followed for the purpose of increasing soil fertility and maintaining good yields.

Crop Scout - Precise assessments of pest pressure (typically insects) and crop performance to evaluate economic risk from pest infestations and disease, and the potential effectiveness of pest and disease control interventions. Enables growers and crop consultants to locate and tag crop issues and make decisions for site-specific treatments

Crop Year - The year in which a crop is harvested. For corn and soybeans, it is from September 1 to August 31.

Custom Farmer - Works land for landowner

Erosion - The process in which water or wind moves soil from one location to another.

Fallow - Resting farmland without growing a crop

Fertilizer - Any organic or inorganic material of natural or synthetic origin which is added to soil to provide nutrients, including nitrogen, phosphorus and potassium, necessary to sustain plant growth.

Graminicide - Herbicide targeting weedy grasses

Green Snap - Breakage of corn plant by high winds

Oilseed Crops - Primarily soybeans, and other crops such as peanuts, cottonseed, sunflower seed, canola and mustard seeds used to produce edible and/or non edible oils, as well as high-protein animal meal.

Organic Farming - Organic farming is a production system, which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators, and livestock feed additives. To the maximum extent feasible, organic farming systems rely on crop rotation, crop residues, animal manures and mechanical cultivation to maintain soil productivity and tilth, to supply plant nutrients and to control weeds, insects and other pests.

Petiole - The stalk by which a leaf is attached to a stem



COMMON CROP TERMINOLOGY (Continued)

Seedsmanship - About having "customers' mud" on their boots. Customer first policy.

Soil - In the United States, about 70,000 kinds of soil are recognized in the nationwide system of classification. Each has a unique set of characteristics and a potential for use. These characteristics are important in designing a conservation plan to protect the soil from erosion if it is being cultivated.

Surfactant - Helps performance of herbicides in sprays; aid in mixing, coverage, wetting of leaves; sticking to leaves, absorption into leaves. Breaks through wax layer of leaf to aid in absorption

Sustainable Agriculture - An integrated system of plant and animal production practices having a site-specific application that will, over the long term, satisfy food and fiber needs; enhance environmental quality and natural resources; make the most efficient use of nonrenewable resources and on-farm resources; integrate natural biological cycles and controls; sustain the economic viability of farm operations; and enhance the quality of life.

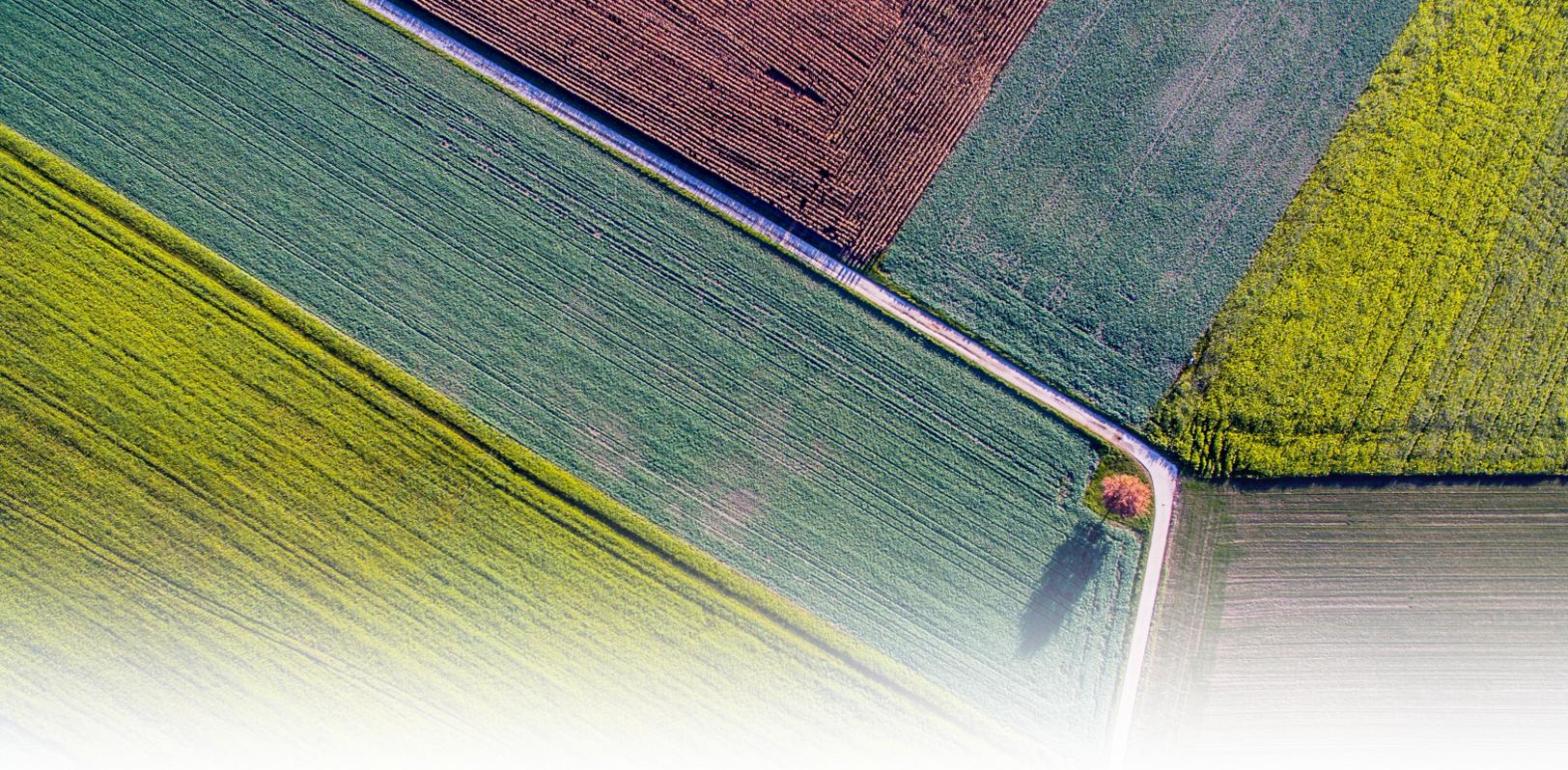
Tilth - The cultivation of land; tillage. Soil tilth is ideal soil composition with water and air equally distributed.

Vertical Integration - The integrating of successive stages of the production and marketing functions under the ownership or control of a single management organization. For example, much of the broiler industry is highly vertically integrated in that processing companies own or control the activities from production and hatching of eggs, through the growth and feeding of the chickens, to slaughter, processing and wholesale marketing.

Yield - The number of bushels (or pounds or hundredweight) that a farmer harvests per acre.

Yield Mapping - This is an innovation that utilizes special equipment (monitors and GPS equipment) to help determine the variation in yield from one area of a field to another.

Volatility - Herbicide changes from a liquid or solid to a gas; can cause plant injury from drift of vapors



COMMON CROP ACRONYMS

AYT - Accelerated yield technology

CPS - Crop protection services

FSA - Farm Security Administration

MRL - Maximum residue level

NDF - Neutral detergent fiber (common measure of fiber for feed analysis)

PHI - Pre-harvest interval

REI - Re-entry interval

RFQ - Relative forage quality

RFV - Relative feed value

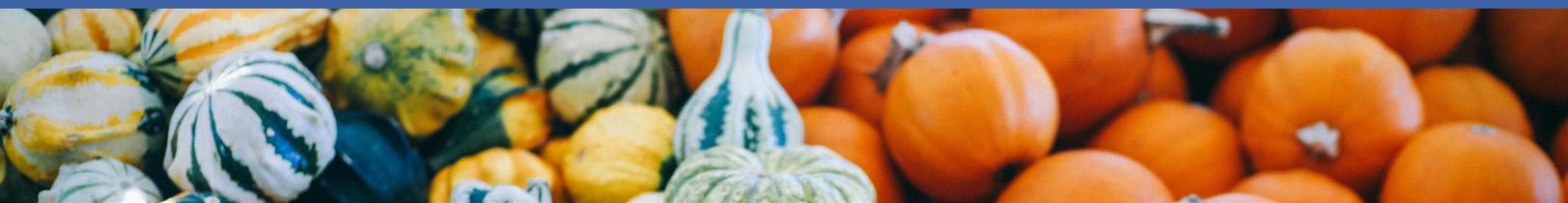
ROI - Return on investment

TDN - Total digestive nutrients

VRT - Variable rate application technology (part of precision agriculture)

CATEGORIES OF CROPS

Pome Fruit	Stone Fruit	Cucurbits	Citrus	Row Crops
Apple	Peach	Cantaloupe	Orange	Corn
Pear	Nectarine	Cucumber	Grapefruit	Cotton
Hawthorne	Plum	Honey Dew	Lemon	Soybean
Loquat	Cherry	Pumpkin	Lime	Canola
Chokeberry	Prune	Squash	Tangerine	Sunflower
Pomegranate	Apricot	Watermelon	Pomelo	Lentil
Saskatoonberry	Avocado	Zucchini	Clementine	Chickpea
Medlar	Olives	Gherkin	Kumquat	Safflower



Leafy Vegetables	Root / Stem Vegetables	Brassica Cole	Feed Crops	Specialty Crops
Lettuce	Asparagus	Cabbage	Oats	Curcubits
Spinach	Carrot	Cauliflower	Alfalfa	Citrus
Celery	Garlic	Brussel Sprout	Barley	Pome / Stone Fruit
Baby Greens	Onion	Broccoli	Wheat	Leafy Vegetables
Kale	Turnip	Kale	Corn	Stem / Root Vegetables
Collards	Potato	Collards		Fruiting Vegetables
Turnip Greens	Celery	Watercress		Potatoes



EQUIPMENT GUIDE

We've come a long way from handpicking and treating our crops. Technology innovations continue to make the job of farming more efficient and more methodical every year. With each unique crop category comes a collection of specialized equipment to make previously manual tasks a breeze. Therefore, we'll explore tractors, harvesters, balers and agriculture implements in this next section:



TRACTORS

4WD & Track Tractors - Largest in size and horsepower. Used to attach the largest implements with a large powerful hydraulic system to power air seeders. Midwest users use these for powering fast tillage operations. Canadian and the northern US plains use is for pulling and operating the largest air seeders available.

Compact Utility Tractors - Smaller tractors in the 20-60 horsepower range used for landscaping, loader work, homeowners with acreage, livestock operations, hobby farms.

Row Crop Tractors - Larger horsepower tractors capable of attaching larger implements like tillage equipment, planters, seeders, drills, and pulling grain carts

Specialty Tractors - Tractors in the compact and utility tractor size but with unique widths or heights to allow the tractor to work in between trees at orchards, fit between vineyard rows, low enough to fit inside poultry houses and under orchard and tree nut trees.

Utility Tractors - Larger framed tractors that are more capable of lifting heavy loads and running smaller farm equipment. Typically used in farming applications as a smaller loader/mowing tractor and smaller hay operations. Used heavily for mowing roadside vegetation.



HARVESTERS

Beet & Potato Harvesters - These harvesters first cut and remove the green portion of the plant and then pull and sort the root crops like potatoes and sugar beets from the ground. There are self-propelled and tractor towed options.

Combines - From small to the largest in sizes. Main use is for harvesting and processing row crops like corn, soybeans, wheat, and other small grains. The combine is the main machine that processes the crop which is fed into the machine by the header attachment, which there are two basic types, corn and small grains.

Cotton Harvester - Unique to picking or stripping cotton. There are two types of cotton harvesters and end products from the harvesters. The picking harvester picks the ripe cotton from the plant without destroying the plant so multiple harvests can be done over a season as new cotton ripens. A stripping harvester cuts the entire cotton plant from the ground and processes the cotton balls and leaves the remaining plant material or chaff on the ground. There are two types of offloading of the processed cotton, the first and older type is the collection of cotton into modules which are large compressed rectangles of cotton left on the field. The newer type of cotton processing creates large round bales of cotton that are wrapped in plastic and left on the field.

Forage Harvester - Crop processing harvesters for row crops used to feed livestock. These harvesters chop and shred crops like corn to process the entire corn stalk and fill trucks and trailers with a chute.

Fruit & Nut Harvesters - There are multiple types of fruit and nut harvesters that are specific to the type of crop being harvested. There are mechanical harvesters for berries, grapes, olives that pick and process the crop to collection bins. There are tree shaking harvesters that are typically used for harvesting almonds, walnuts, and pecans.

Tobacco Harvester - Unique to harvesting tobacco crops. These harvesters cut each plant at the base and have some sort of mechanical picking system to allow the entire plant to be hung to dry without damaging it.



BALERS

Balers - There are multiple sizes of bales available for different types of crops of hay, straw, and forage. The oldest standard size are the smaller rectangle bales that are produced and typically hand loaded onto a cart. The round baler introduced a larger round bale that is usually moved by a tractor. The latest size change has been the large rectangle bale which eliminates the unused space on a trailer that the round bales have. The length of the rectangle can be optimized to stretch the width of the trailer being used to transport the bales which maximizes the efficiency of each load.



AGRICULTURE IMPLEMENTS

Air Seeder - Similar set up with terms of planting the actual seeds as the box drill but the seed is delivered to the ground with air from a blower. The seeds are stored in a separate container and hoses are connected to the individual rows. The tractor typically powers the blower unit with hydraulic power which requires a high amount of horsepower to both pull the implement and power it.

Box Drill - A large box sits atop the seeding units that supplies the seed to the ground. Drills come in two types typically, no-till and conventional tillage applications. These drills are typically used for small grains like soybeans and wheat.

Cultivator - Pulled by a tractor, is used to cultivate or till the ground to prepare the seedbed before planting. Newer models of tillage tools can reach higher speeds to cover my ground in less time.

Disc Mower / Conditioner - Used to cut hay in pasture fields or mass hay productions.

Floater Chassis - These self-propelled spreaders are used for high speed application of fertilizer and other granular nutrients prior to tilling or planting. They can also be used to fertilize pastures for livestock.

Planter - Used to plant corn and soybeans typically with a standard row spacing of 15 or 30 inches. Widths vary from 4 rows to 48 rows with the typical standard size of 12-30 rows being the most popular.

Sprayer - Both towed and self-propelled sprayers are available on the market. Sprayers can range from small boom widths to very wide widths with carbon fiber booms extending the width to new sizes.

Tedder - Used to stir cut hay in the field to speed drying before baling can be done.



USEFUL LINKS & RESOURCES

Though we've touched on a lot of basic terminology, the Ag industry can't simply be whittled down into a 20-page eBook. So if you're looking for more resources to continue learning, here are some of our favorites:

Fungicides and Ingredients	http://www.nda.agric.za/doaDev/side-Menu/ActNo36_1947/AR/Fungicides.htm
Active Herbicide Ingredients	http://gaweed.com/Herbicide_Modes_of_Action.pdf
EPA Site for Other Animal/Ag Terms	http://www.epa.gov/agriculture Contains links to agriculture and animal glossaries.
USDA Crop Progress Information	http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1048 Charts and documents for current status of planting, growing, and harvesting of US crops. Published weekly on Mondays from early April to mid November.



AG ACCESS: Your Partner for Ag Market Research

If you're looking for a research partner in the Ag industry, we invite you to try Ag Access. We provide you with access to unique individuals in the Ag industry throughout the supply chain and across the US & Canada. With 20+ years of experience conducting studies in the agriculture space, we can help you connect with these individuals, recruit participants for your study or run a full study with our team.

With diverse sourcing & sampling base with mixed mode communication & engagement, we guarantee high-quality audiences of the following types:

- **Crop Growers (Row, Specialty, and Tree Crops)**
- **Livestock Producers (All animals as well as integrators)**
- **Dealers/Distributors (Crops, chemicals, parts, and equipment)**
- **Consultants and Pest Control Advisors**
- **Feed Mills and Feed**
- **Supply Stores**
- **Nutritionists and Veterinarians**
- **Turf Management (Golf Courses, Lawn Care, Pest Control, and Integrated Vegetation Management)**
- **Land Owners with Utility Tractors or Zero Turn Mowers**

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