NEW HOLLAND AGRICULTURE

Soybeans

CROPPING GUIDELINE

CROP HANDBOOK

Soybeans

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CROP HANDBOOK

Statistic

SOYBEAN PRODUCTION BY COUNTRY	
Country	(Values in Metric Tons)
United States:	103.419.000
Brazil:	103.000.000
Argentina:	57.000.000
Other:	21.829.000
China:	12.200.000
India:	11.700.000
Paraguay:	9.000.000
Canada:	6.050.000
WORLD	**324.198.000**

This month (May 2016) the United States Department of Agriculture (USDA) estimates that the World Soybean Production 2016/2017 will be 324,2 million metric tons.

Soybean Production last year was 315,86 million tons. This year's 324,2 estimated million tons could represent an increase of 8,34 million tons or a 2.64% in soybean production around the globe.

Cropping Guidelines

SOYBEANS	
OPERATIONS	**AGRONOMICS AND TIMING**
Crop rotation	After corn, winter wheat, sugar beet: avoid sunflower, canola and soybeans. Turning 4 years
Primary tillage	Minimum tillage (max 15 cm) • Plough • Chisel • Heavy cultivator Or sod seeding
Secondary tillage	Harrows, spyke harrows, light field cultivators
Planting	
Timing	From 15 April to 10 of May (soil temp. > 10°C)
Population at harvest	30-40 plants per square meter: weight of 1000 seeds about 200 grams
Distance between rows	25-30-45-70-75cm
Distance between plants	5-6cm (45 spacing between rows)
Depth	4 cm
Soil insecticide	Only when if soil heavily infested: inoculation can damage crop
Fertilizying	
Nitrogen (N kg/ha)	0, inoculation with Brady rhizobium Japonicum: if failed, 80 -100 top fertilization
Phosphorus (P_2O_5 kg/ha)	50 at planting: Or 70 before planting 50 in soils which content Olsen > 20ppm
Potassium (K_2O kg/ha)	0 in good soils 90 in soils with K < 100ppm
Weed control	
Minimum tillage:	Post emergence 2 sprayings : hoeing
Sod seeding	Glyphosate before sowing: post emergence as usual
Pest control	Spraying
Harvesting	Content of moisture in grains 14% or less

DROPLET SIZES FOR DIFFERENT CHEMICALS

ASABE STANDARD S-572.1 DROPLET SPECTRUM CATEGORIES[1,2]	CONTACT INSECTICIDE AND FUNGICIDE	SYSTEMIC INSECTICIDE AND FUNGICIDE	CONTACT FOLIAR HERBICIDE	SYSTEMIC FOLIAR HERBICIDE	SOIL-APPLIED HERBICIDE	INCORPORATED SOIL-APPLIED HERBICIDE	RELATIVE SIZE	COMPARATIVE SIZE	ATOMIZATION
VERY FINE (VF) RED								Point of Needle (25 microns)	Fog
FINE (F) ORANGE	✓							Human Hair (100 microns)	Fine mist
MEDIUM (M) YELLOW	✓	✓	✓	✓				Sewing Thread (150 microns)	Fine Drizzle
COARSE (C) BLUE		✓		✓	✓	✓		Stample (420 microns)	Light Rain
VERY COARSE (VC) GREEN				✓	✓	✓		Stample (420 microns)	Light Rain
EXTREMLY COARSE (XC) WHITE						✓		#2 Pencil Lead (2,000 microns)	Thunderstorm

Droplet sizes are suggestions for each pesticide. [1] Based on VDO.5, the Volume Master Diameter (VMD) designation. Source: Kansas City University.
[2] Revision of Stantard S-572.1 also includes extra-fine and ultra-coarse categories for non agricultural users.
This droplet guide summarizes suggested droplet sizes for a variety of chemicals, based on the ASABE standard droplet spectrum categories.

Crop Rotation - Crop Development

- **Soybean is the main source of vegetal protein and oil at a global level.** Oil is processed for industrial and human nutrition uses. Flour is used for human nutrition and cakes are the protein base for fodder industry, which production is used for all categories of animals, particularly dairy (milk) and beef cattle, pigs, chicken, fishes and many other.
- **Climatic condition for soybean are very similar to conditions for corn.** Minimal temperature for growth is 6°C, and optimum for growth is 24-25°C. Seedlings of soybeans are more resilient than corn to cold weather. An average sum of 3500°C Day Degrees is necessary for soybean to give a yield in warm regions: in northern region, this value is less.
- **In rotation, the best place for soybeans is prior to cereal** (corn, wheat, rice, others). The first important fact is that soybeans improve the content of N into soil (researches show that residual N in soil after soybean harvesting can be from 30 to 60kg of N per hectare), so that the following cereals needs less N from fertilizers. **After soybeans, both wheat and maize yields have a trend to increase, if compared with yield produced after other crops.**
- **Control of broadleaves weeds is rather easy in cereals, when grasses are controlled very easy in soybeans,** so that the rotation of such crops brings to a better general control of weeds and decreases the weeds' seeds bank in soils.

WHY IS IT IMPORTANT?

- **Crop rotation, as a rule, improves performances of each crop.** This is particularly true when a cereal (e.g. corn) follows a legume (e.g. soybeans) because of different levels of Nitrogen available in the soil and let in the soil with residue.
- **Rotation** allows to spread operations in different seasons of year which easier management of farms.
- **Exploitation of soil fertility** is improved, as different crops roots explore different layers of soil: also different crops prefer different nutrients. Soybean enriches the content of N in soil for following crops.
- **Structure of soils improves,** because residues from crop roots stay at different depths and residues are also different.
- **Management of pests, diseases and weeds** get easier because different crops have different pests: avoid turning soybeans with sunflower and canola (Phytophtora and Sclerotinia are shared diseases).

A SYSTEM BASED ON AGRONOMY

HARVEST

RESIDUE MANAGEMENT

CROP PROTECTION

BETTER CROPS, HIGHER YIELDS

PRIMARY TILLAGE

PLANTING

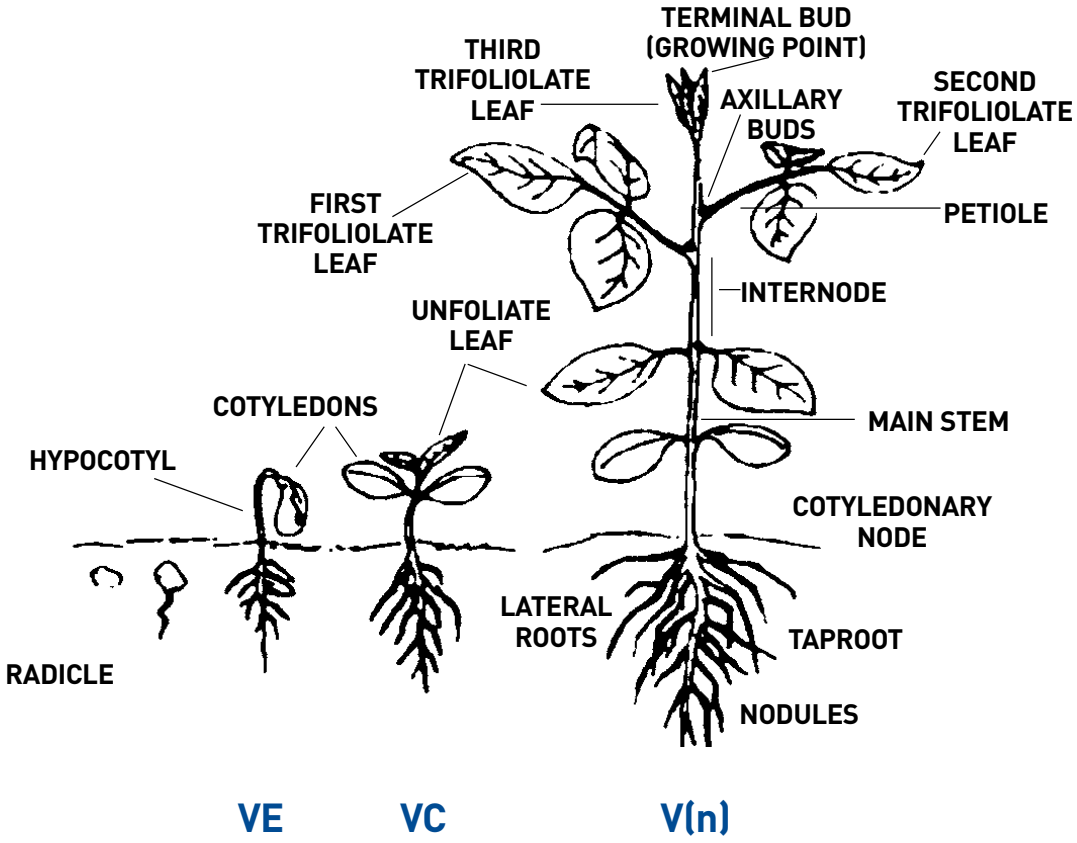
SEEDBED TILLAGE

SOYBEANS STAGES

VEGETATIVE STAGES (V)		
STAGE	**DESCRIPTION**	
VE	**Emergence**	Cotyledons above the soil surface.
VC	**Cotyledon**	Unifoliolate leaves unrolled sufficiently so that the leaf edges are not touching.
V1	**First-node**	Fully developed leaves at unifoliolate node.
V(n)	**nth-node**	The "n" represents the number of nodes on the main stem with fully developed leaves beginning with the unifoliolate leaves.

SOYBEANS STAGES

REPRODUCTIVE STAGES (R)		
STAGE	**DESCRIPTION**	
R1	**Beginning bloom**	One open flower at any node on the main stem.
R2	**Full bloom**	Open flower at one of the two uppermost nodes on the main stem with a fully developed leaf.
R3	**Beginning pod**	Pod 3/16 inch long at one of the four uppermost nodes on the main stem with a fully developed leaf.
R4	**Full pod**	Pod 3/4 inch long at one of the four uppermost nodes on the main stem with a fully developed leaf.
R5	**Beginning seed**	Seed 1/8 inch long in a pod at one of the four uppermost nodes on the main stem with a fully developed leaf.
R6	**Full seed**	Pod containing a green seed that fills the pod cavity at one of the four uppermost nodes on the main stem with a fully developed leaf.
R7	**Beginning maturity**	One normal pod on the main stem that has reached its mature pod color.
R8	**Full maturity**	Ninety-five percent of the pods have reached their mature pod color. Five to ten days of drying weather are required after R8 for the soybean moisture levels to be reduced to less than 15 percent.



Tillage

- **For soybeans, likewise for corn, several different tillage patterns are possible.** Conventional primary tillage (moulboard plough), conservative primary tillage with disk rippers, minimum tillage and sod seeding (no till) are broadly practiced.
- In conventional tillage, seedbed finishing is performed with an array of implements, **as tine harrows, disk harrows and others. The goal is to get a firm seedbed beneath a layer of loose soil** on surface, allowing for uniform and quick germination of seeds. If the upper layer is too fine, crusting may happens.

PRIMARY AND SECONDARY

- **Primary tillage** for soybeans is better carried out at fall. Today, it is much harder to pick our operating days given larger farms, but we can reduce the pressure to do so by leaving soil more level in the fall. Right primary tillage begins behind the combine with residue management.
- **A wide choice of tools** are available for primary tillage, as moldboard plow, chisel plows, disk rippers, offset disk.
- **Disk ripper** was reinvented with more aggressive residue handling up front, more clearance, and an array of seedbed attachments on the back. This really lent itself to less field leveling in the spring when soils are generally recharged with water.
- **Secondary tillage** is carried out before planting. The goal is to achieve a proper seedbed, which means soil particles of right size for good contact between seeds and soil.

SOYBEANS, BACTERIA AND SOIL AIR

A PARTICULAR CASE

- **Soil with a rough surface** hinders proper seed germination and plant growth, ultimately leading to lost potential yield.
- **Large soil clods** can cause planter row units to bounce. This makes it challenging to control planter depth and maintain seed placement accuracy for uniform plant spacing.
- **Different heights** in the soil surface result in variable moisture and temperature levels.
- **Soybeans get N from the air** through a bacterial symbiosis. It means that bacteria actually colonize soybeans roots, forming nodules . If content of air in soil is poor, bacteria develop badly or do not develop.

WHY TILLAGE IS IMPORTANT

- If soil is **excessively wet,** soil pores are filled with water, not air. There is no N to fix.
- **Compaction** has been shown to affect nodulation soybeans more than N fertilized legumes. **If there is no air, there is no N to fix for bacteria**.
- A good seed bed is important because **plant roots require water and oxygen** from the soil roots pore space.
- If there is an surplus of N in soil, nodules develop poorly or not at all.
- The **right soil-air-water balance** (soil 50% volume, air and water 50%) helps limiting plant stress during drought periods and enables the plant to fully explore the soil profile for nutrients. Plants are able to use water efficiently and grow strong roots for good anchorage.
- **At the end** what we need for soybeans is a smooth seedbed, also because Dicot plants emergence is more difficult than for Cereals in presence of crust.

ADDING BACTERIA

WHERE DOES N COME FROM?

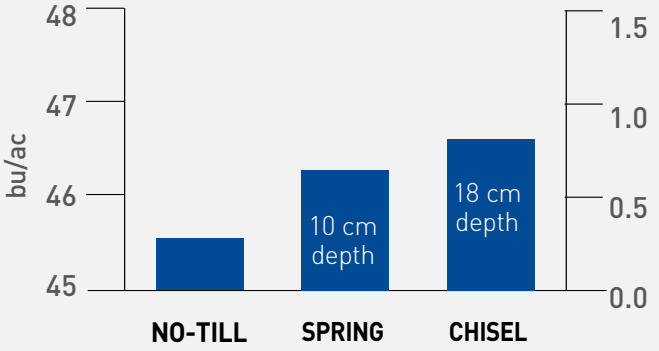
- **Soybeans is a legume** and should normally provide itself N through a symbiotic relationship with N-fixing bacteria of the species Bradyrhizobium japonicum.
- **Inoculation is the application of specific bacteria (rhizobia) to the soybeans seed prior to planting.** Brands of inoculants can be purchased in various formulations including: liquids, frozen prep, peat based, dry powder based and granular. If bacteria are not present in soil, plants will not fix N.
- Always keep the inoculant and inoculated seed **out of the sun in a cool, shaded place.**
- **Inoculant strains do vary and are becoming more efficient**. It's suggested that new inoculant strains be used every few years for improving soybeans yields.

TEXTURE OF SOIL

PLANTS GET ADDITIONAL WATER

1999 Soybean Yields
in Primary Tillage at Defiance, OH

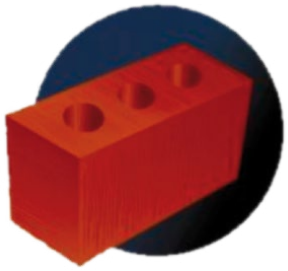
Note: 1BU/AC≈66.7 Kg/Ha



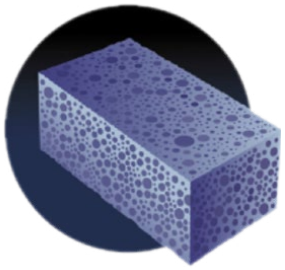
PONDING

MISCONCEPTION: PONDING IS A RESULT OF TOO MUCH RAINFALL

Not necessarily. Usually ponding is a result of poorly managed soil. When soil is compacted, it cannot absorb water. Compacted soil is like a sponge that is squeezed tight: there is no space for air and water. To make matters worse, compacted soil forms an impenetrable layer that prevents excess water from draining through. The result is ponding.

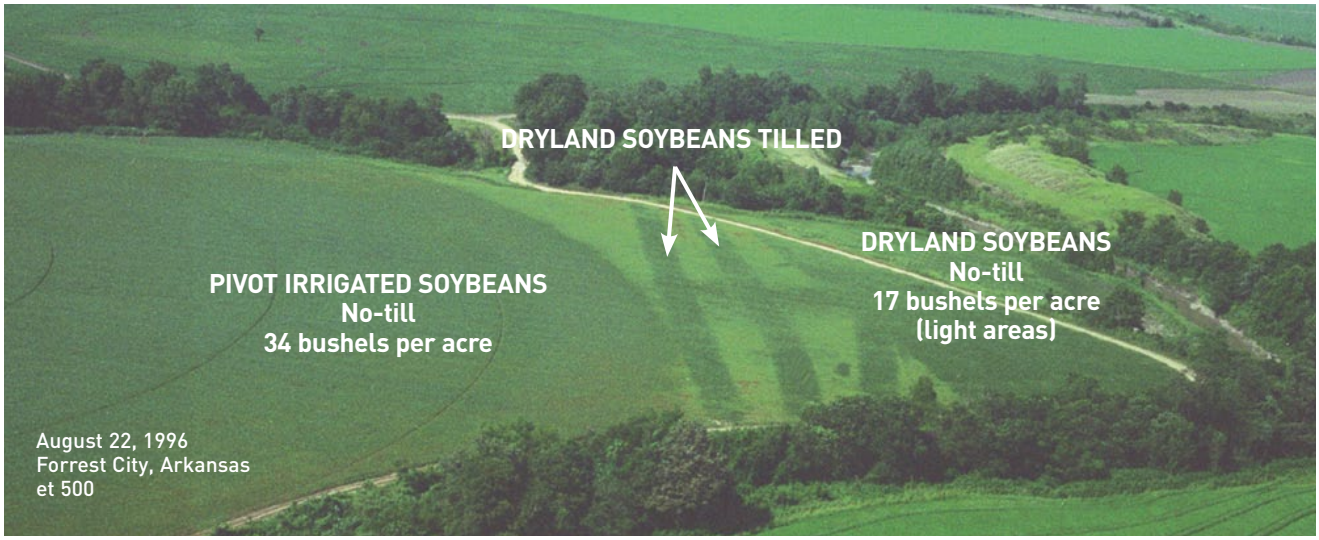


POOR TILLAGE MEANS BRICK



PROPER TILLAGE MEANS SPONGE

PRIMARY TILLAGE IS IMPORTANT



Planting

- **Soybeans varieties are divided in groups,** depending on their relative time of maturity.
- **Groups are designated by Roman numerals** (from 000 to X), where 000 is a very early variety and X is a very late variety. **As for corn, early varieties are less productive than late ones.** Groups 000, 00 and 0 are mostly for Northern regions and very short warm season, groups I, II, III are for temperate climates, when from IV to X are for warm, subtropical and tropical conditions. Maturity groups differ from one another of 10-15 days concerning earliness: this value is only a guideline and refers to the same growth environment. Breeders assign maturity group numbers, and breeders can give advice on climate needs of varieties. Of course the more varieties can use the complete warm season, the more yields will be higher.
- **Soybeans cropped varieties have indeterminate habit of growth:** this means that vegetative and reproductive stages overlap and the same plant bears flowers and pods at different stages of development. **Soybeans, differently from corn, does not react positively to early planting** and, as a rule, soybeans planting is performed after corn planting. Timing depends on local conditions, starting from April to middle May in Northern Hemisphere. In warm to temperate climates, early varieties (00-I) are planted in July after barley harvest to get a second yield. There are hundreds of varieties for very different climatic conditions. The most important parameters when choosing a variety are:

  1. **Maturity group: make sure that varieties are well adapted to the warm season length in order to reach maximum yields in good time, before Autumn rains begin.**
  2. **Yield capacity.**
  3. **Resistance to diseases.**
  4. **Resistance to lodging.**

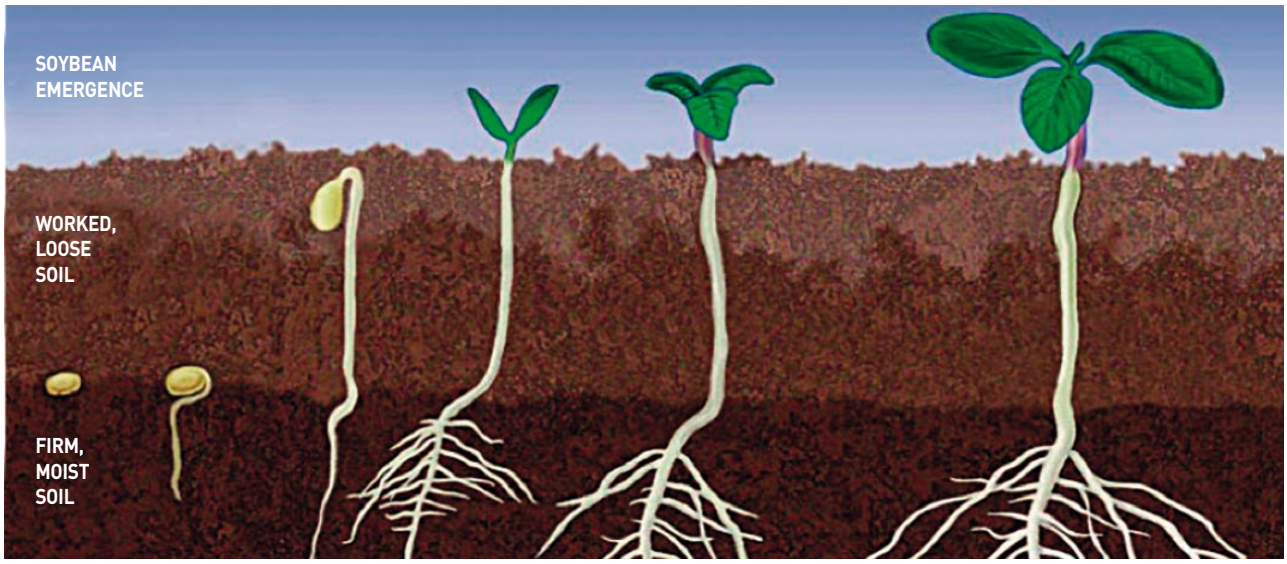
- **Soybeans is both drilled (cereal drills) and planted (precision planters)**, however the trend is mostly toward precision planting with pneumatic planters, also because soybean seeds are rather fragile. Interrow spacing varies from 25 to 76 centimetres, most commonly being 45-50 centimetres.

  As guidelines, **seed rate suggested is 35- 45 seeds per square meter, which means 65-75 kg per hectare, depending on seeds size; the goal is to get at harvesting 35-40 plants per square meter.** However, soybeans is very "plastic", meaning that when population is low, every plant increases in size; when population is high, every decreases in size. The result is that plant "compensate" the effect of more or less population density. Seeds need moisture to germinate, so depth should be 3 centimetres in heavy soils, down to 5 centimetres in light soils. Deeper planting can make difficult emergence of seedlings.
- Soybeans is a legume family plant and is capable to host bacteria in structures of roots called nodules.
- **Inoculation of soybeans seeds means that bacteria cultures are added to seeds or soil during planting operations.** Bradyrhizobium japonicum is the symbiotic bacterium responsible for formation of nodules on soybeans roots .The plant forms nodules as a consequence of the infection of bacteria on roots. In nodules, bacteria are fed by the sugars synthetized by the plant; they fix Nitrogen from air. This N is then available for plant nutrition. Active nodules have a characteristic pink-reddish colour, because an hemoglobin (Leghemoglobin) is involved in the Nitrogen fixation processes.
- **Inoculation is necessary the first time soybeans is cropped on a field, and if soybeans has not been cropped on the field for 3-4 years,** because bacteria survive into soil several years. **However, as a rule, if any doubt exists about the presence of bacteria into soil,** it is better to add inoculant to the seeds, also because the cost of these inoculants is not high. Failure of inoculation means failure of N fixation and substantial decreasing in yield. True, it is possible applying N fertilizer on soybean, but then the production costs increase.
- **Heavy rains after planting and formation of crust on the soil hinders emergence of soybeans seedlings,** so in heavy soils the seedbed finishing must not bring to an excess of very fine soil particles.
- **Replanting is justified when the population after emergence is lower than 10 plants per square meter.**

UNIFORMITY IS EVERYTHING

- **Uniformity in soybeans** emergence is an important factor for high yield which require having enough productive plants to utilize available resources. And productive plants require a well-prepared seed bed.
- **Plants that emerge** uniformly and progress at the same rate of development throughout the growing season, deliver improved yield potential.
- **Uneven emergence** introduces inefficiencies and added competition within the stand. Larger, early emerging plants obtain a greater proportion of available resources (light, water, nutrients) than smaller, later-emerging plants.
- **Uneven stands** are more difficult to harvest.

EMERGENCE



- **Early and even emergence** is one of the most critical elements to attain genetic yield potential from all the crops.
- **The sooner the plant gets out of the ground, the sooner it can develop** a more advanced root system and leaf stage to fight off stress factors that are sure to come its way.
- **Plant uniformity** is also crucial to good, healthy stands. Plants have the ability to reach 100% productivity if they are all at the same growth stage at the correct time of year.
- **That is why** it is so crucial to smooth the seed bed according to soil type and the crop.
- **The soybeans is a dicot plant that has epigeal emergence (above the surface). After seed germination, the cotyledons are pulled through the soil surface by an elongating hypocotyl. The soil penetrating structure is the hypocotyl arch. Once emerged the green cotyledons (seed halves) open and supply the new seedling with stored energy while capturing a small amount of light energy.**

Research throughout the Midwest indicates that for optimum soybeans yields, the seed must be uniformly spaced and placed at a uniform depth. The University of Illinois Agronomy Handbook says soybeans stand reduction often is related to nonuniform field conditions, including topography and soil type differences.

Crop Protection

WEED CONTROL

- Differently from corn, **soybeans thick population allows for a self-protection from weeds,** but only after the first stages of growth. Thus, the best herbicide for soybeans protection and weeds control is a thick stand of the crop. Nevertheless, when weeds are installed, they can cause losses of yield up to the 80%.

Most common grasses in soybeans are Setaria spp, Digitaria spp, Echinocloa spp., Sorghum spp: broadleaves are Amaranthus spp, Chenopodium spp, Solanum nigrum, Polygonum spp and many others. Therefore, chemical control of weeds is needed very often.

E.g., herbicides applied in pre emergence against grasses are Alaclor, Metoalaclor, Pendimetalin, Trifluralin; against broadleaves, Pendimetalin, Metribuzin, Linuron. Post emergence herbicides are Acifluorfen, Bentazon, Fomesaphen, Sethossidim, Quizalofop, Sulfonylureas and others. Glyphosate is generally applied in pre-planting to burn weeds on seedbed, and in post emergence only on varieties resistant to this herbicide (Genetically Modified, e.g Round-up ready varieties and others). This is not the case until now in APAC region.

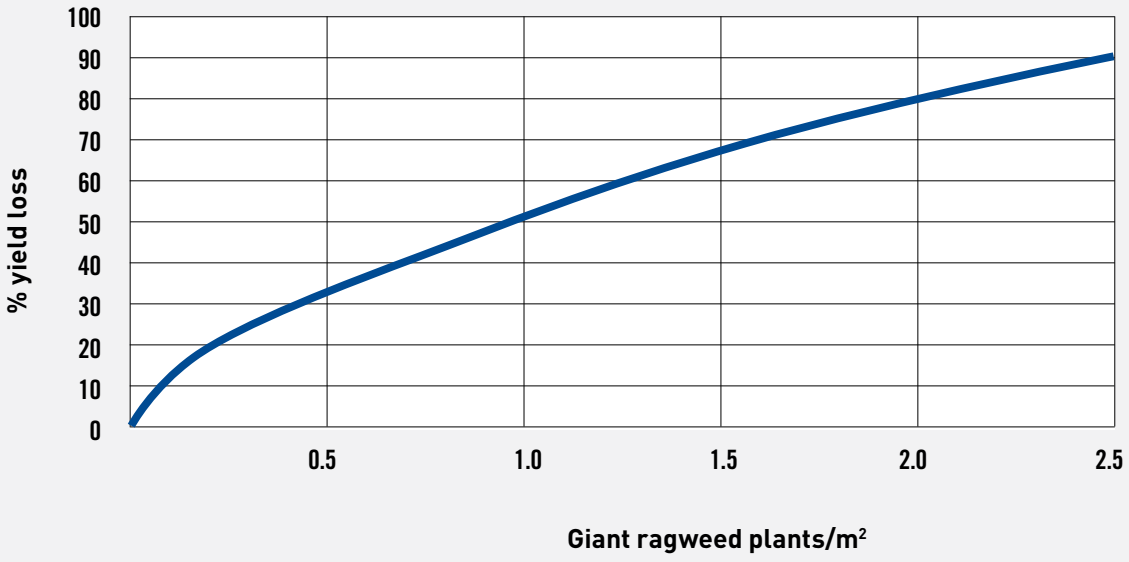
INSECT CONTROL

- **Insects and mites attack soybeans plants, but luckily only a few cause damages to the plants in temperate climate**. In tropical and subtropical climates, insect are much more aggressive and they make several generations during the cropping season. Fields' scouting (checking for insects and diseases) starting from stage R1 can assess populations of insects and level of defoliation of plants. This helps in deciding when an insecticide application is required. Insecticides' treatments should be done only on a "**treated as needed**" base,meaning that spraying is performed onla when and where necessary, because chemical insecticides are costly and overtreatments are polluting. Most common pests in soybeans are:
- Spider mite **(Tetranychus urticae and others)**, feeds on foliage when temperatures are high in dry weather. As feeding activity increases, leaves become yellow, then brown. Mites usually appear at the edge of fields, so a treatment along the edgesof the fields is sufficient to control the pest.
- **Caterpillars, loopers and armyworm feed on foliage and can completely destroy the crop in warm climate if undetected.** However, soybean plants can partially compensate for loss of foliage: thus economical thresholds for treatment is 35% of foliar surface destroyed before the flowering and 15% after the flowering.
- Stink bugs **(Acrosternum hilare, Nezara viridula)** attacks pods during the maturing stages. If more than 2 adults are found on 1 meter of row, the threshold for application is reached. Yield losses can be substantial if treatment is not performed.
- Corn earworm **(Heliothis zea)** attacks both foliage and pods. Severe damage can occur.

Spraying

FACTS

- **Soybeans** is a poor competitor with weeds in first stages of growth and when cool soil temperatures cause slow germination and growth, but competes effectively in warm soils when germination and growth are rapid.
- **Management practices** such as thorough seedbed preparation, adequate soil fertility, choice of a well-adapted variety, and use of good quality seed all contribute to conditions allowing good competition with weeds.
- In modern soybeans **crop protection is of paramount importance**, whatever the crop pattern are. The less tillage is applied, the more chemical control of weeds gets crucial.
- **Weed control** is carried out both with pre-sowing, pre-emergence and on top spraying. Weeds or and pest can damage the yield up to the 100%, if not controlled or controlled to late.
- **In soybeans, once weeds begin** to impact yield, each additional day they are allowed to compete can result in yield losses of up to one percent per day.
- **Pest control** (Armyworm, Caterpillars, Aphid, Spider mite) is often needed through top spraying on high plants.
- When spraying is needed, **timeliness** is more crucial than in other operations. Weeds and pests are to be hit in right time.
- **Productivity and reliability** are important factors affecting the result of spraying operations.
- Accurate application rate of chemicals imposes **precision in spraying.**
- **Uniformity an size of droplets** allow proper effect on pests an consistent crop coverage.
- **Adjustments of pressure and volume** are required depending on what the target is (weeds, fungi, insects).
- **Drift control** is another important factor when spraying.



(Illinois State University)

EQUIPMENT TO AVOID IMPACT OF WEEDS AND PESTS IN SOYBEANS

New Holland Guardian™ Front and Rear Boom Self Propelled Sprayers are reliable machines for keep in control weeds, insects and deseases in soybean. Front Boom Sprayer allows for great visibility of boom during operations. Industry leading 50/50 weight distribution and equal weight distribution to all tires maximize power to the ground and make possible to come to the field early after rain. Power up to 400hp, tank (6056 liters) and boom (up to 35.5 meters) deliver outstanding productivity and reliability. Crop Clearance of 1.82 centimeters allows for treatments during the whole season.

AMBROSIA TRIFIDA

Giant ragweed

Lambsquarters

Fertilization

- **Soybeans can adapt to different soils, even to not much fertile ones, because the plant can fix N from atmosphere.** A pH of 5.5 and up is sufficient for normal nutrition, acidic soils must be treated with lime. In order to get high yields, Phosphorus (P) and Potash (K) are needed. For P, plant absorption is rather constant during the season, but P is more needed during the starting phase of seeds filling. K is needed more than P, it is absorbed during the whole cycle of the plant and about half of K is stored in seeds. As guidelines, 50-60 kg of P_2O_5 and 70 kg of K_2O are needed in soils with sufficient content of these two nutrients. Up to the double of such rates are needed in deficient soils.
- Soybean crops with a normal presence of nodules (about 30 nodules per plant) do not need N fertilization.
- Fertilizers are spread on soil and then they are incorporated into soil with harrows or similar implements.

Harvesting

ROTOR COMBINE ARE GOOD OPTION FOR HARVESTING SOYBEANS

- Content of moisture 14% or less, plants defoliated completely, pods are brown.
- Wheat Header (better flexible), Draper Header or Varifeed Header.
- It is important to harvest also the pods on the lower part of the plants.

VARIFEED ADJUSTABLE HEADER:

- Mainly small grain harvest, rapeseed (no need for extension), but also other seeds & beans & pulses.
- All crops, as one can adjust the knife position on the go, therefore one can adapt the crop flow regarding the conditions. Increasing capacity by reduction of header losses at faster forward speeds.

FLEX HEADERS

NEW HOLLAND CONVENTIONAL AND TWIN ROTORS COMBINES

- **New Holland CX and TC conventional combines** thresh the grain by the drums, the separation is performed by the drum, the optional or standard rotary separator and the straw walkers. The straw walkers evacuate the straw from the combine. **Conventional combines are more adaptable to every crops (large and small seeds).** They maintain good performances in difficult and moist conditions. Conventional combines can be operated without the need to fully load the machine. As a rule, they are less expensive than rotary combines.
- **New Holland CR Rotary combines** do not have a threshing drum, rotary separator or straw walkers. The CR rotary combine has two twin rotors that do the threshing and the separation job. The beater behind the rotors evacuates the straw from the combine. **Rotary combines perform better in 'heavy grains' (wheat, corn, beans), because of the larger threshing and separation areas, due to rotor length.** The crop flow through the machine is more rapid, and higher engine powers are installed to match with wider headers for outstanding productivity. Today rotary combines are adapted to suit most harvesting conditions. "Grain on grain" threshing action gives low grain crackage and excellent grain sample.

Machinery

IMPLEMENTING YOUR GROWTH PROJECTS

Crop producers know that their soil is the most precious natural resource, and better soil conditions mean higher crop yields. New Holland knows that every individual plant counts towards your bottom line and that's why we design our equipment specifically to help you maximize yield potential.

ST830 CHISEL PLOW

New Holland ST830 Chisel Plow is a reliable and extremely rugged piece of tillage. It can perform a proper primary tillage for many crops in a rather conventional farming system.

HOE DRILLS

New Holland Hoe Drills and Precision Hoe Drills deliver precise seed and fertilizer placement, making it ideal for seeding different crops on large acreages. A large choice of seeding systems is available (sweeps, openers, knives) as well as fertilization options (single shot or double shot), in order to match agronomical and economic needs of our Customers.

AIR CARTS & HOE SEEDERS

New Holland Air Carts have proven to be highly precise seed and fertilizers systems. Precise rates of seed and fertilizers are delivered there where they must. When minimum tillage systems are applied, New Holland seeding equipment is an outstanding means to improve both technical & economic goals all around the world, with seeders P2050, P2060 and P2070 Series.

GUARDIAN SPRAYERS

Very likely to other crops, soybeans need an accurate protection, especially when minimum and no till systems are applied. The cab-forward, rear-engine design, front boom of New Holland Guardian sprayers provides equal weight distribution across the machine to get operators into fields earlier for more timely application with less rutting and soil compaction. Never watch behind.

NEW HOLLAND COMBINES SERIES

New Holland CR twin rotor series are equipped with rotor for gentle threshing, which is particularly fit for soybeans. Headers are flexible, in order to minimize yield losses from lower pods. CX Series are conventional combine, which also can perform a good harvesting in soybeans. Varifeed Adjustable Header perform adjusting knife positioning on the go, allowing the farmer to adapt crop flow based on current conditions. The result is maximum capacity while reducing header losses at faster forward speeds.

NEW HOLLAND TRACTORS SERIES

New Holland tractors series are the result of an outstanding legacy in agricultural machinery manufacturing. There is ever a New Holland tractor matching the needs of farming, from tillage to harvest.

AT YOUR OWN DEALER

Visit our website: **www.newholland.com**
Send us an e-mail: **international@newholland.com**

New Holland prefers AMBRA lubricants

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