Corn

PRODUCTION GUIDELINES

CROP HANDBOOK

Corn

CROP HANDBOOK

Statistic

WORLD CORN PRODUCTION 2016/2017

CORN PRODUCTION BY COUNTRY	
Country	(Values in Metric Tons)
United States	366,539,000
China	218,000,000
Others	94,904,000
Brazil	82,000,000
EU-27	64,275,000
Argentina	34,000,000
Ukraine	26,000,000
Mexico	23,500,000
India	23,000,000
Russia	14,000,000
Canada	13,750,000
Indonesia	9,600,000
Philippines	8,000,000
Nigeria	7,200,000
South Africa	7,000,000
Serbia	7,000,000
Ethiopia	6,300,000
WORLD	**1,005,068,000**

In May 2016 the United States Department of Agriculture (**USDA**) estimates that the **World Corn Production 2016/2017** will be 1011.07 million metric tons.

Corn Production last year was 968.86 million tons.

Production Guidelines

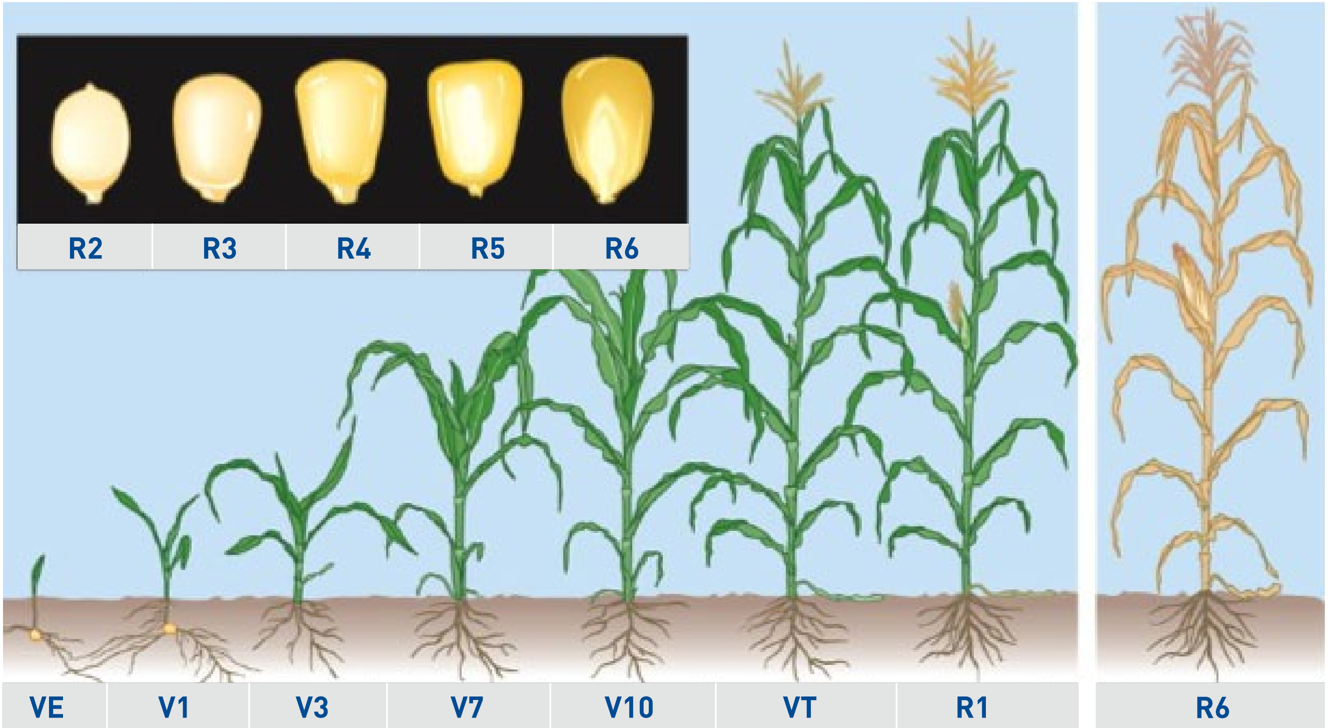
CORN	
OPERATIONS	AGRONOMICS AND TIMING
Crop rotation	After winter wheat, sugar beet, soybeans. Turning 2 years
Primary tillage	Minimum tillage (max 15cm) • Plough • Chisel • Heavy cultivator Or sod seeding
Secondary tillage	Harrows, spyke harrows, light field cultivators
Planting	
Timing	From beginning of April to 10 of May (soil temp. 10°C)
Population at harvest	6-7-8 square meter (8 plants for silage) weight of 1000 seeds about 350 grams
Distance between rows	70-75
Quantity of seeds	18-19cm (75 between rows)
Depth	3-4.5
Soil insecticide	At planting in the seeds furrow
Fertilizying	
Nitrogen (N kg/ha)	90 at planting and 120-160 top fertilization
Phosphorus (P_2O_5 kg/ha)	70-90 at planting or 90- 120 before planting
Potassium (K_2O kg/ha)	0 in good soils 60 in soils with K < 120ppm
Weed control	
Minimum tillage:	Before emergence and Post emergence : hoeing
Sod seeding	Glyphosate before sowing: post emergence as usual
Pest control	Spraying when damage threshold
Harvesting	Content of moisture in grains about 25%

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.

CORN PRODUCTION CALENDAR



Crop Rotation - Crop Development

WHY IS IT IMPORTANT?

- Crop rotation, as a rule, improves performances of each crop, though corn is one of most resilient crops at this regard and can be cropped for many years on the same field.
- Rotation, anyway, allows to spread operations in different seasons of year which eases management of farms.
- Exploitation of soil fertility is improved, as different crops roots explore different layers of soil: also different crops use different fertilizers at different rates.
- 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 and different chemicals are applied.
- Corn yield increases when corn and soybean are grown in sequence instead of continuously.
  One factor is the effect of residue on nitrogen (N) supply. Soybean residue is lower in quantity than corn residue, and it has a much higher N content. The breakdown of soybean residue, therefore, ties up little or no N, leaving more for the following corn crop.
- Corn is one of most resilient plant to continuous monoculture, especially in fertile light soils and when residue are incorporated into soil with abundant fertilization, thus improving the organic matter content of soil. Tests have shown the possibility of cropping mais on the same fields for 50 years. In monoculture, tillage management must be particularly careful, avoiding compaction of soil. However, corn in rotation with soybean or other legumes is surely a best choice on order to perform a better weed and pests' control and using less N on maize. Other cereals can entry rotation, as wheat and barley, as well as row crops as sugarbeet, sunflower and others.

A SYSTEM BASED ON AGRONOMY

LAND 10,000HA (100KM²)												
CROPS	UTILIZATION PERIOD											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Corn				Plant Corn					Harvest Corn			

LAND 2,500HA (25KM²)												
CROPS	UTILIZATION PERIOD											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Corn				Plant Corn					Harvest Corn			
Wheat							Harvest Wheat		Drill Wheat			
Spring Barley		Drill Barley				Harvest Barley						
Sugar Beet			Plant Beets					Harvest Sugar Beet				

SOYBEANS AND CORN; A BENEFICIAL RELATIONSHIP

- Corn yield increases when the crop rotation alternates between corn and soybean rather than growing either crop continuously.
- Soybean residue has a much lower Nitrogen content when compared to corn.
- Therefore the breakdown of soybean residue ties up little Nitrogen, leaving more Nitrogen for the following corn crop.

ROTATION

RESULT


Corn following Soybeans

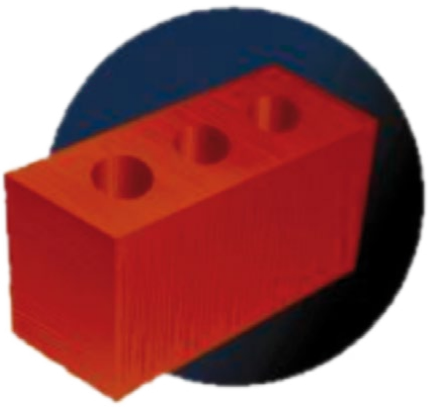

Corn following Corn

Tillage

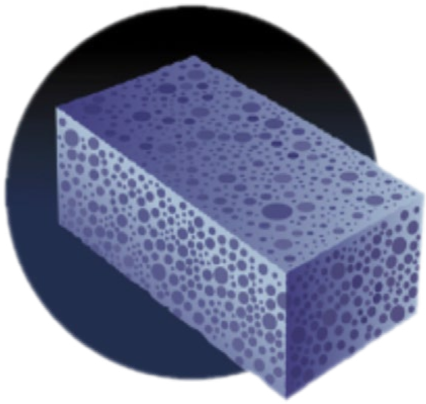
PRIMARY AND SECONDARY

- **Primary tillage for corn is better carried out at fall.**
  - **Research** discovered that reducing both clod and valley sizes in the fall can dramatically reduce the risk of emergence problems in spring.
  - **Ideal Clod Size:**
    ✓ Prairie Soils: 15cm (6in) or less
    ✓ Forest Soils: 12cm (4.5in) or less
  - Action of frost on tilled soil during the winter helps in reaching a proper seed bed texture in spring.
- **Timeframe:** Primary tillage should begin behind the combine.
- **A wide array of tools are available for primary tillage,** such as
  - Moldboard plow
  - Chisel plows
  - Disk rippers
  - Offset disk.
- **Disk rippers** can be used for aggressive residue handling up front, more clearance, and an array of seedbed attachments on the back. This reduces field leveling and moisture losses in spring when soils are recharged with water.
- **Secondary tillage** is carried out before planting in spring. The goal is to achieve a proper seedbed, which means soil particles of right size for good contact between seeds and soil.

- **Soil with a rough surface** hinders proper seed germination and plant growth, ultimately leading to lost potential yield.
- A good seed bed is important, because plant roots require water and oxygen from the soil roots pore space for sprouting.
- The right soil-air-water balance helps in 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.
- Research carried out showed that many as 7000 plants per hectare, or up to 10 percent of the net effective stand, could be lost due to poor seed bed conditions. Most of those lost plants were recovered, simply by focusing on delivering level output, both clod and valley free, following primary tillage.
- **In APAC Region,** ploughing (moulboard plough) is still very common as primary tillage for corn. On average, working depth is between 28 and 35 centimetres. Nevertheless, more and more customers are realizing that **disk rippers are an outstanding alternative to moulboard plough.** Disk rippers allows for good soil structure, consistent soil tilth, sufficient residue management and seedbed finishing in one pass, with evident economic advantages when compared with ploughing. More, existing hard pans are broken, with advantages for root growth, plant nutrition and water management.
- Seedbed finishing is performed with an array of implements, as tine harrows, disk harrows, rototills and many 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.



Restricted Pore Space like a brick



Ample Pore Space - Half Air & Half Particles like a sponge

ECONOMICS

- The financial reward for preparing an optimum seed bed is significant.
- For example, with 1,000 acres (404 Hectares) of corn priced at $4.50 per bushel, ($180 per ton @1bushel=25.40kg) keeping all clods and valleys to 6-inches or less and achieving a smooth seed bed translated to a $75,600 income advantage with yields of 7bu. acre per 1,000 effective plants at harvest.
- New Holland research demonstrated a 6.6% yield recovery when creating a level seed bed following primary tillage.

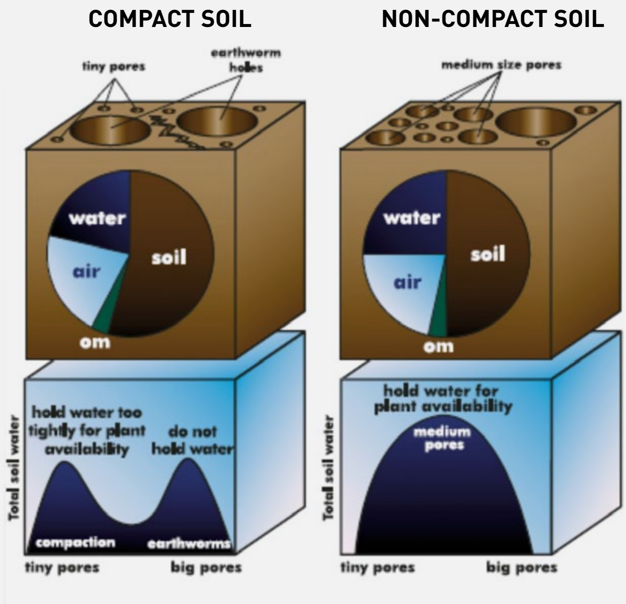
WATER MANAGEMENT THROUGH TILLAGE

We can not manage nor water neither texture of soil. But we can manage tillage.

PONDING

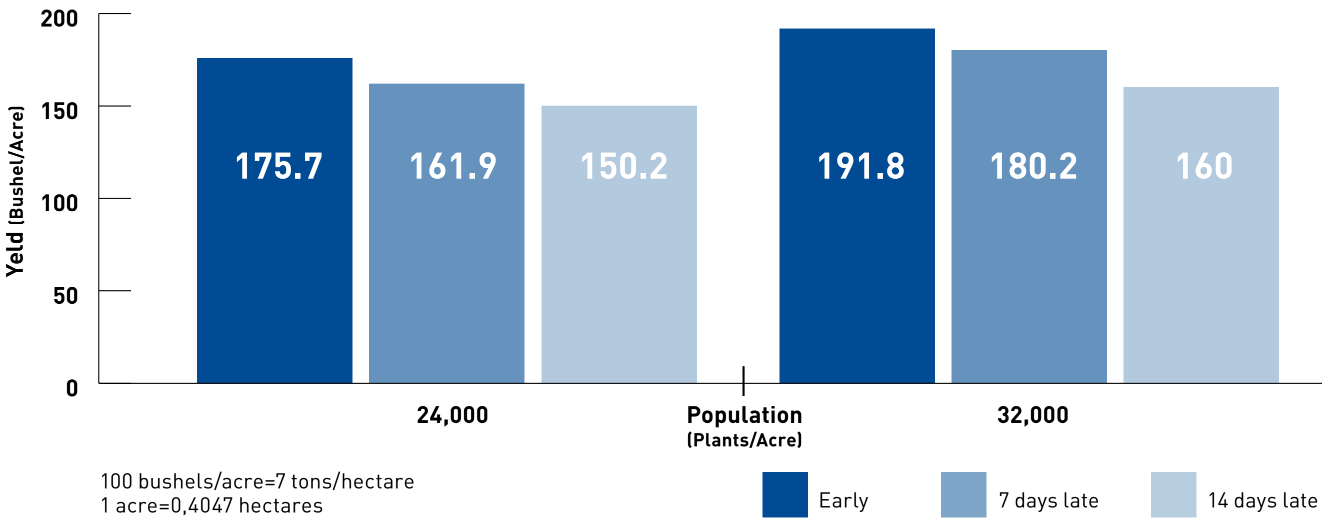
MISCONCEPTION: PONDING IS A RESULT OF TOO MUCH RAINFALL

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.



EMERGENCE

Emergence of corn depends on seeds, moisture, temperature. It depends on tillage too.



Source: University of Minnesota

Planting

UNIFORMITY IS EVERYTHING

- **Uniformity in corn emergence** is an extremely important factor for high yields 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, also known as "photocopy plants," deliver improved yield potential. Two bad plants will not give as one good.
- **Uneven emergence introduces inefficiencies and adds competition within the stand.** Larger, early emerging plants obtain a greater proportion of available resources (light, water, nutrients) than smaller, later-emerging plants.
- **Purdue University research says** that uneven emergence can reduce corn yields by 9 to 22 percent. Significant plant spacing variability is also detrimental and can reduce corn yields from 2 to 4 percent.

There are many hybrids adapted to very different conditions. The most important parameters when choosing seeds are:

1. **Precocity:** as a rule, late hybrids are more productive than early ones. Precocity is definite as duration of cycle of corn from emergence to maturation (days) or as conventional classes FAO, from 100 (very early) up to 800 (very late).

These classifications are rather indicative. A more precise estimate is based on Day Degrees calculation, or the sum of °C needed for growth of the plant until the stage of maturity. For corn the formula is:

Day degrees = ∑(Tmax°C+Tmin)/2)-10

The chart below shows the relationship between FAO classes and Day Degrees values. In the North of Italy, which is one of the Region with higher yield per hectare around the world.

FAO CLASS	100	200	300	400	500	600	700	800
Day degrees from planting to maturation	1230	1300	1340	1365	1400	1450	1520	1600
Average days (North Italy, 20 yeras trials)	121	127	130	133	136	140	146	153
Minimum days in the hottest year	100	106	110	112	115	117	126	126
Maximum days in the colder year	133	140	144	145	149	152	170	179

2. **Hybrid with erect leaves** have a major potential yield. This is due to less shadowing of bottom leaves and the possibility for planting more seeds per square meter (thicker stands).
3. **Resistance to diseases** (Fusarium).
4. **Resistance to lodging.**
5. **Stay green character,** or the capacity of an hybrid for keeping green foliage for a longer period, thus increasing the total product.
6. **Resistance to corn borer.**

Corn is a typical spring crop, demanding much water, warm and nutrients. Planting begins in April, when soil temperature is 10°C , which is the minimum temperature allowing germination. At 15°C plants emerge completely in about 12-15 days. Nowadays the trend is on the side of early planting. This trend is due to several factors:

1. **modern hybrids** are more resistant to cold weather (early vigour)
2. **early planting** means also early harvesting and less need for grain drying
3. **plants are more robust**, less tall and more resistant to lodging
4. **flowering is earlier,** and this means that it is more likely to avoid hydric stress during the summer
5. l**ate planting** are more risking than early ones.

As a rule, if different hybrid seeds are available for planting, better to plant the early ones before and the late ones after. Ideally, planting should be performed in 10-15 days; this is possible not every year. Spacing between rows in APAC is 70 or 75 centimetres, but other spacings are practiced in other Regions. Interrow spacing depend on desired stand, varying from 16,6 centimetres for a stand of 8 plants per square meters to 22 centimetres for a stand of 6 plants per square meter. This means on average 75.000 seeds per hectare or 20-25 kilograms of seeds per hectare. Several researches shown that the best stand at harvesting is between 6 and 9 plants per square meter, with an optimum at 7-8 plants. Hybrids' producer can suggest the best choice in each environment. Seeds must be dressed with insecticides and fungicides.

Depth varies from 4 (moist soil) to 7 (dry soil) centimetres, depending on soil moisture content. Obviously, seeds must be placed in a moist layer, avoiding dry layers. Good practice is apply P_2O_5 at planting, in order to get a "starter effect". If necessary, also granular insecticides are applied during planting, to avoid damage of seedlings by wireworms and other soil insects.

SIX PRIMARY AGRONOMIC DRIVERS OF SEED PLACEMENT ACCURACY

Producers should consider six agronomic drivers of seed placement accuracy at planting time. Depending on the type of seed and field conditions, certain drivers may have more or less importance:

1. Proper and accurate seed depth
2. Uniformly correct seed depth across the planter and throughout the field
3. Good soil-to-seed contact
4. Uniformly correct soil pressure all around the seed
5. Accurate seed population
6. Accurate in-row seed spacing

Low amounts of light reaching the soil beneath a good corn canopy indicate very high percentages of light interception.

Early planting and uniformity are the base for stand consistency.

EMERGENCE

EARLY PLANTING FOR EARLY EMERGENCE

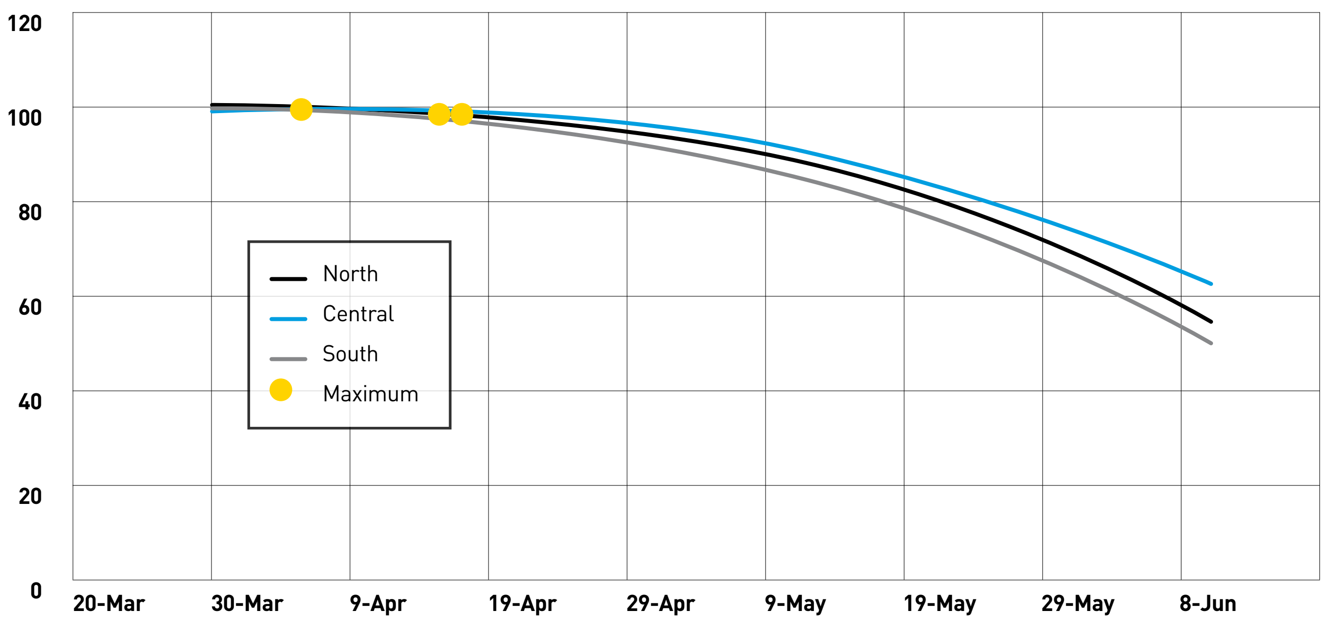
- Early, even emergence is one of the most critical elements to attain genetic yield potential of plants.
- The sooner the plant gets out of the ground, the sooner it can develop a more advanced root system and leaf stage to fight off stress factors that are sure to come its way. The sooner the plant gets out, the lesser will be damaged or destroyed by soil pests.
- Double or triple plants compete with each other and cause yield loss. This is also the result of uneven plant spacing caused by planter bounce due to poor seed bed smoothness.
That is why it is so crucial to smooth the seed bed according to soil type and the crop to be planted.

(University of Illinois modified)

RELATIVE YELD POTENTIAL OF CORN BY PLANTING DATE AND POPULATION

	PLANTING DATE				
	April 20 - May 5	May 5 - May 15	May 15 - May 25	May 25 - June 5	June 5 - June 15
Population (Plants/Acre)	PERCENTUAL MAXIMUM YELD				
45,000	97	93	85	68	52
40,000	99	95	86	69	53
35,000	100	96	87	70	54
30,000	99	95	86	69	53
25,000	95	91	83	67	51
20,000	89	85	77	63	48
15,000	81	78	71	57	44
10,000	71	68	62	50	38

Note: Values based on preliminary Iowa research and modelling; 100% yeld potential is estimated to occur with 35,000 plant population and early planting.



Note: Changes in corn yeld by planting date in three Illinois regions, two locations per region. Data are averaged over three years (2005 to 2007). The green circles indicate the dates when maximum yeld occurred.

MINIMUM TILLAGE PLANTER CAN ALSO BE USED AFTER CONVENTIONAL TILLAGE

Planters can work both in conventional and minimum tillage conditions. The vacuum system (more accurate than pressure systems), the gear and meter disks allows accuracy and consistency concerning depth and dose of seeds. Working speed about 5-6miles/hour or 8-9km/hour.

Precision planters feature pulled gauge wheels that ride up and over obstacles, vacuum system and the result is uniformly correct seed depth and seed placement accuracy.

Crop Protection

WEED CONTROL

- Differently from plants such as soybeans and wheat, **corn planting thickness does not allows for a self-protection from weeds**, especially during the first stages of growth. Thus weed control has ever been a crucial factor in corn farming. Chemical control of weeds is surely the base for crop protection, but also mechanical means such as hoeing and interrow cultivation are broadly applied.
- **Herbicides** like alaclor, metoalaclor, pendimetalin, and others are mostly used in pre-emergence.

  Post emergence herbicides are the group of sulfonylureas (rinisulfuron and many others) and hormonal (2,4D, Dicamba) and others. Glyphosate is applied on hybrids resistant to this herbicide. This is not the case until now in APAC region.
- **Pre sowing spraying** with total herbicides are common to get a "clean start" for corn. Pre-emergence sprayings can be performed on the whole surface of field or only along the rows (band spraying). Post emergence sprayings are usually performed on the whole surface.

INSECT CONTROL

- **During the first stages of growth,** corn can be damaged by soil insects as cutworms and wireworms. This is why it is suggested to apply granular insecticide at planting along the furrows. Not ever this is sufficient, cutworms can be present in large populations, especially in warm years, and thus spraying is needed also in these early stages.
- **Later in the season**, corn borer (Ostrinia nubilalis) is certainly the major concern for farmers. This insect damages corn in several ways.
  1. **By boring stalks and ears**, thus hindering movements of nutrients and water.
  2. **Holes in stalks and ears** make possible stalks breaking and ears dropping when harvesting.
  3. **Damage on ears** make possible the growth of fungi with production of mycotoxins.
- **During the late spring and summer** two to three generations of corn borer are likely in temperate climates: in tropical climates, 6 generations per year are possible. Sticky traps are placed in the fields to monitor the presence of adults, and scouting is carried out to monitor the presence of eggs on the bottom side of corn leaves. Once the insect is present and economic threshold is reached, then spraying with insecticide is needed. High clearance sprayers are available to perform this task.

Spraying

FACTS

- In modern corn cultivation, crop protection is of paramount importance, whatever the crop pattern are: and the less tillage is applied, the more chemical control of weeds gets crucial.
- Weed control is carried out both with pre-planting, 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.
- Pest control (e.g. European corn borer) is often needed by 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 and with precise doses of chemicals.

Black cutworm larva and injury to small corn plant (Photo courtesy Robert Bellm).

European corn borer larva.

- Productivity and reliability are important factors affecting the result of spraying operations.
- Uniformity and size of droplets allow proper effect on pests an consistent crop coverage, also depending on thickness of canopy.
- Adjustments of pressure and volume are required depending on what the target is (weeds, fungi, insects).
- Numerous university and company researches show that if weeds are allowed to emerge with corn and are left uncontrolled while corn is growing from the first leaf to 3td leaf, the yield loss is usually more than one bushel per acre per day. (60 kg per hectare)
- Drift control is another important factor to avoid damages to surrounding environment.

Giant ragweed

Lambsquarters

Velvetleaf

TOOLS

New Holland Guardian Sprayers have clearance and balance which are crucial facts from agronomic point of view.
Sprayer must deliver consistent size of droplets depending on which chemical is used and on what canopy.

Hoeing

A GOOD HOEING IMPROVES WATER UTILIZATION

- Hoeing, manual or mechanical, was a must when herbicides were not available.
- Today it is more a complementary operation, helping weed control and water management in dry soil.
- To be carried out when corn is about 10-20 centimeters high, to avoid mechanical damages to the crop.

Fertilization

- **Corn is potentially the most productive cereal;** this also means that corn is very demanding in terms of plant nutrition. Corn is cropped not only for grain but also for silage.

Silage corn is the base of modern cattle husbandry, both dairy and beef. A crops yielding 10 ton per hectare of dry grain (14% moisture content) removes:

GRAIN

ELEMENT	
Nitrogen (N)	140 kg/ha
Phosphorus (P_2O_5)	60 kg/ha
Potash (K_2O)	50 kg/ha

SILAGE

ELEMENT	
Nitrogen (N)	240 kg/ha
Phosphorus (P_2O_5)	100 kg/ha
Potash (K_2O)	210 kg/ha

As usual, fertilization must be based on soil analysis results. Guidelines for high yields can be as follow:

GUIDELINES

ELEMENT	
Nitrogen (N)	from 150 to 250 Kg per hectare
Phosphorus (P_2O_5)	from 80 to 120 kg per hectare
Potash (K_2O)	from 0 to 150 kg per hectare

PRE-PLANTING FERTILIZATION

- **A fertilization in pre-planting is rather common.** The 100% of P and K can be spread in pre-planting. Before the finishing of field in spring, fertilizers are spread on soil and then they are incorporated into soil with harrows or similar implements. Before the closing of rows, it is common to perform a top dressing with N fertilizers as solid Urea or liquid solutions of nitrogen fertilizers. Of course, it is suggested to incorporate N fertilizers into soil to avoid losses due to volatilization. Concerning N distribution, guidelines can be as follows:

NITROGEN

LIGHT SOILS	
Pre-planting	90kg per hectare
Top dressing	100kg per hectare

HEAVY SOILS	
Pre-planting	180 kg per hectare
Top dressing	90 kg per hectare

Irrigation

- **Availability of water** during the critical stages of corn is certainly one of the most important factors in order to obtain high yields. In this regard, the most critical phase for corn is the period between pre flowering and pollination, also the period of grain filling up to waxy maturity is rather critical. Irrigations carried out before the flowering are the most productive, because they influence the number of flower per plant and thus the number of kernels per plant. Further productivity gains can be realized by watering the fields during pollination, thus ensuring the full setting of kernels. Corn is irrigated with different methods, such as surface irrigation (furrows), sprinkler irrigation (pivot and frontal machines) and drip irrigation in particular conditions. Water height for each watering is between 400 (sprinkler) and 700 (surface) cubic meters per hectare.

Harvesting

- Corn is ripe when kernel moisture content is about 30%.
- Harvest when kernels grains contain 25% moisture or, better, less than that figure.
- It occurs from end August to October-November.
- Corn header is a dedicated tool and can be equipped with stalk chopper.
- Kernel moisture is about 30 percent at R6. Then, drying rates are normally 0.4 to 0.8 percent moisture per day. Ideal harvest moisture for field corn is 15 to 20 percent, which typically occurs 2 to 4 weeks after R6.
- **The best indicator for harvesting is the moisture content of the kernels:** the best range is between 28% and 21%: a content of 25% of moisture is the most common. Harvesting when moisture is higher means spend money for drying the grain and also means damage the grains during the trashing; on the other hand, waiting for moisture lower than 21% means risks of lodging and stalks breaking. However, when the bottom of the kernels is black (black layer stage) the corn is fully mature; after that stage, the further maturation process is simply due to losses of moisture from the kernels. Tips for losses estimate at harvesting: each ear lost means about 50 kg corn lost per hectare; on average, a loss of 30 kernels per square meter means about 100 kg corn lost per hectare.

THE ROW SPACING IS FIXED, DEPENDING FROM THE MODEL: 70 OR 75 OR 80CM

STALK CHOPPER AS OPTION

CORN ROWER

- The CornRower is an attachment available for CNHI Rigid Corn Headers.
- The header collects corn stover left over after harvesting and deposits the stover in a neat windrow behind the Combine.
- By utilizing this system, farmers can
  - Collect stover for biomass or livestock applications
  - Reduce residual residue
  - Reduce passes across the field
  - Better utilize current equipment

CORN SILAGE

- 62-70% is the preferred moisture to ensure maximum digestible nutrients.
  - Lower moisture can limit the ability of bacteria to process crop during ensiling.
  - Dry corn becomes fluffy and difficult to pack increasing likelihood of undigested crop.
  - Corn that is cut dry (<50%) must either be accompanied by expensive water and chemical treatments or be cut extremely fine and then supplemented with additional long fibrous dry matter like hay or stover to stimulate the rumen.
  - Excessively wet silage (>70% moisture) can result in nutrient loss through seepage.
- Crop Processors are essential for cracking the kernel/shell at harvesting. Breaking the shell provides cows access to the valuable starch inside.
- The underside of many row-independent corn headers are equipped with knives to break the stalk and promote stalk rot down.

LEFT: FR harvesting low-moisture corn.

RIGHT: Broken stalks for quick rot down.

Machinery

IMPLEMENTING YOUR GROWTH PROJECTS

NEW HOLLAND ST830 / FC820

Chisel Plow

New Holland ST830 Chisel Plow can perform a proper primary tillage for corn in a conventional farming system.

NEW HOLLAND GUARDIAN SPRAYERS

Sprayers

It's all about doing more with less time. Guardian™ front-boom sprayers cover ground faster, reduce downtime and maximize acres sprayed per hour. These sprayers offer the highest horsepower, largest tank size, and the smoothest suspension combined with the highest ground clearance and the tightest turning radius in the industry to maximize your spraying productivity and quality.

NEW HOLLAND FR

Forage Harvester

New Holland forage harvesters Series FR are manufactured for delivering an outstanding cutting and chopping of corn, which delivers a healthy silage. Processors are essential for cracking the kernel/shell at harvesting. Breaking the shell provides cows access to the valuable starch inside. The underside of many row-independent corn headers are equipped with knives to break the stalk and promote stalk rot down.

NEW HOLLAND TRACTORS SERIES

New Holland has a huge legacy in manufacturing agricultural tractors, which are used in all conditions and on all crops. New Holland tractor Series, starting with T5 Series up to T9 Series, offer to our Customers a wide choice of units with the necessary configurations combined with the right powers for all operations.

NEW HOLLAND BALERS

New Holland Balers are an efficient tool for baling not only wheat straw, but also corn stalks and residue when needed for biomass production.

NEW HOLLAND COMBINES

New Holland combines Series TC, CX and CR offers a wide choice of equipment to perform an efficient corn harvesting. From simple conventional combines TC up to extra productive CR twin rotor combines, tradition and technology at New Holland are the fundaments of a successful story.

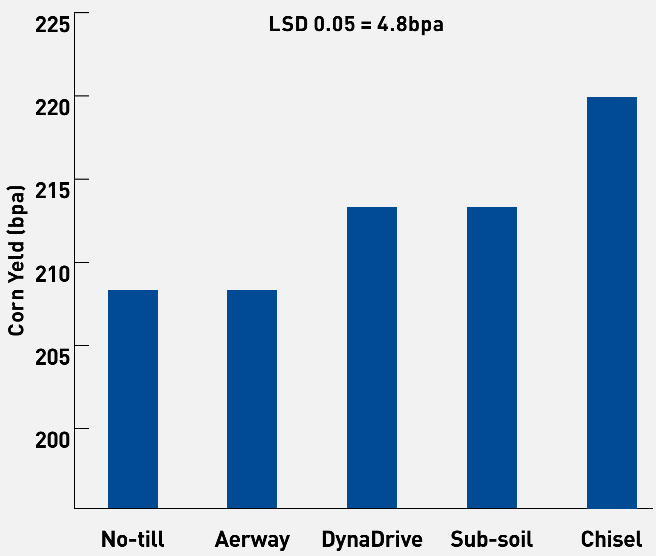
NEW HOLLAND COMBINES ATTACHMENTS

The Corn Rower is an attachment available for CNHI Rigid Corn Headers. The header collects corn stover left over after harvesting and deposits the stover in a neat windrow behind the combine. By utilizing this system, farmers can collect stover for biomass or livestock applications, reduce residual residue, reduce passes across the field and better utilize current equipment.

EFFECT OF TILLAGE ON ROTATED CORN, UNIV. OF ILLINOIS, NWRC, 2004-2009

Tillage Treatments

1. No-till.
2. Dyna-drive: shallow, thorough residue incorporation, spring tillage.
3. Aerway: shallow, minimal residue incorporation, fall tillage.
4. Blue-Jet sub-soiler: deep, minimal residue incorporation, fall tillage.
5. Chisel plow: deep, thorough residue incorporation, fall tillage + spring field cultivator pass.



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Published by CNHI INTERNATIONAL SA. Brand Marketing and Communication. Bts Adv. - 12/16 - (Turin) - **AP5708N/INB**