

Max guide

Ten Hints how to make it real



SEEDING
THE FUTURE
SINCE 1856



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Best Yields on the Best Fields

For all farmers who sell the harvest right after it comes from the field, it is a well-known feeling: when yields are high, price is low. When yields are low, price is high. It is only natural, that he wants to prepare for both situations at the same time, with his decisions for the next crop. However, this is a quite contradictory intention. This article is about solutions.

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Preparing the maize crop for a low-yield year, which is mostly a year of great drought problems, will require savings on fertilizer input, as target yield is low (8t/ha or less). Furthermore, it will include a big package of a water saving strategy, as described e.g. in the KWS Drought Guide. Finally, the choice of a (Clima Control 3) hybrid that works relatively better than others, under stress conditions with generally moderated yield expectations (<8t/ha), will help to

create enhanced security, and it helps to participate more efficiently, in higher prices, when yields turn out to be low.

On the other side, heading for record yields, especially on the best fields that the farm has to offer, is also a well-known strategy. This plan requires adequate inputs adapted to the height of yield expectations. 14 tons of grain yield need twice as much nutrients, as 7 tons do. Further options for intensification, like sowing date, sowing density, split timetables for application of fertilizer and herbicide management, and more, must be set up in best adaptation to the variety and to the conditions on farm. Last, but not least, such a high yield strategy will rely on a hybrid that offers a maximum of yield punch and input valuation, in environments that allow >10 tons per hectare.

After introduction of the ClimaCONTROL³ research program, which supports increased security in corn production, KWS has opened a second line reflecting the second important farming strategy, that each farmer bears in his mind: Best yields on best fields.

This program delivers a variety offer to farmers, aiming on optimized response to inputs of intensification, that a farmer can provide to his corn crop. In a large network that covers areas from continental to maritime environments, KWS evaluates the behavior under high yield management. A Plus4GRAIN hybrid will have more power to add more yield, in optimized environments where general yield levels significantly exceed 10 tons per hectare, than a set of commonly grown hybrids, of comparable maturity.

KWS has identified genetic sources delivering higher reactivity in the different

parameters that lead to yield. Increasing yield will only work by maximizing one or more, of the three parameters number of kernels per plant, number of plants per hectare, and kernel weight. Such intensive hybrids need to have a big engine of those yield components, offering significant reserves to play when the chance is there.

The Plus4GRAIN variety range is accompanied by the “Max Guide”, pointing out the 10 most important hints that help farmers to establish a high yield strategy successfully. Despite all innovation, still we are unable to say reliably how the climate will be next season. A quite big part of farmers therefore decides to establish both strategies at the same time, on different parts of their farms.

Good idea! Tools are prepared.



Za bogatu žetvu!

KWS hibridi za najbolje rezultate
u intenzivnoj tehnologiji



Plus4GRAIN

KWS HIBRIDI ZA NAJBOLJE REZULTATE U INTENZIVNOJ TEHNOLOGIJI

KWS KASHMIR FAO 400

KWS INTELIGENS FAO 430

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1. The right variety

If you plan, at least for a certain field, with a target yield on higher than normal levels, then your hybrid must be more responsive to such inputs, than a usual one. It should be especially strong, in environments that often yield e.g. 11 tons per hectare, and more. This is something that your KWS advisor surely is able to deliver.



2. Your best fields

Know the yield potential of your fields, their yield history (t/ha and year), and their soil type. Check your records!

Calculate, what has been the last 10 years yield average in t/ha, and how large have been the differences, of the single years, to that average. Compare the variation of your different fields, e.g. by calculating average differences of single years to the average of all years. In a statistically correct way, this would be the standard deviation of their yields.

Your best fields should have a higher than average mean yield in the past 10 years, and show a lower variation = lower than average standard deviation*

* square root of the sum of the squared yield differences of single years, from the average yield of all years



3. Soil water management

Plus4GRAIN hybrids need water that could come from precipitation, irrigation or groundwater, but could only be stored in the soil through smart agro-technical measures.

In what concerns the water supply, the best corn-growing conditions are achieved when over 250 mm of well-distributed precipitation are accumulated from early May to mid-August and the soil has come out of the winter with a sufficient water supply. Irrigation, ground water or pluviometric regime are the main sources of water supply. On the other hand, soil water management is also achieved through a sum of agro-technical measures designed to facilitate the accumulation, preservation in the soil and its balanced disposal of the plant. Deep soil work in autumn favours a better water accumulation. Preparing the germinative bed with a small number of works, preserves water in the soil and facilitates the contact of the seed with water for a uniform and rapid emergence. Execute your soil works with suitable machineries at best moments, where soil is dry enough to take the load of machines, and damp enough to fall apart into best structural pieces. If necessary, a shallow soil cultivator pass will cut capillary rise just below surface, optimizing water supply to the corn roots, and minimizing water loss through evaporation. Even more, this will keep the soil free from weeds. That way, water can only be consumed by the corn crop.





4. Soil testing and fertility

Soil testing should be on your to-do list right from the get-go, because your soil and its needs will directly influence the growth of your corn. Examining the phosphorus, potassium, and fertilization levels will give you information how to handle your crops. It will also let you know when proper soil conditions are forming, such as the optimal density and right amount of nutrients.

Achieving highest corn yields requires an excellent soil fertility management, beginning with timely application of nitrogen (N) and soil testing to determine existing levels of phosphorous (P), potassium (K), and soil pH. Fertility is fundamental to plant health, and it is the root feed needed to grow big yields – if you don't supply adequate fertility, you are not in the game.

Corn response to numerous inputs will be restricted whenever any nutrient becomes limiting. Although nitrogen gets far more attention, we see a lot more corn production issues associated with inadequate phosphorus, potassium, sulfur, zinc and magnesium.



5. Nitrogen

While most of the other relevant nutrients may be brought on the necessary level in the course of the crop rotation, Nitrogen merits a higher attention to timely applications, due to its high solubility, and the permanent processes of nitrification and denitrification. Whenever the first period risks to get hard, a starter application with nitrogen is positive. An ideal possibility to adapt the total nitrogen level to the actualized yield expectations of the season, is a cultivator pass in combination with a final fertilizer dose. 1 t of grain yield requires ca.18 kg of available Nitrogen, no matter which source it may come from.

We can improve nitrogen availability by well-timed application, and by using appropriate application methods for different nitrogen sources. Supply the most economical rate of nitrogen. Use an application method that will minimize the potential loss of N (incorporation or injection, consider stabilizers under high risk applications, etc.).

We can improve seasonal availability by applying nitrogen fertilizer at specific times according to corn need. We suggest using a split application strategy where you apply a small portion of nitrogen just after plants emerge, followed by the nitrogen fertilizer just before rapid growth stages, when the plants need it most (best together with a cultivator pass).



6. Crop rotation

Rotating crops is one of the practices most often recommended to keep yields consistently high. Rotation breaks or moderates damaging insect and disease cycles that lower corn yields. Including crops like soybean or alfalfa in the rotation can reduce the amount of fertilizer nitrogen, which is required in the following corn crop.

Recycling residue of any of the crops of your rotation, would enhance organic matter content in your soil, which is favourable to productivity. It generally improves soil tilth, supporting root development and reducing compaction. It develops a higher soil water holding capability and infiltration, securing a better nutrient availability, and reducing evaporation and soil erosion.



7. Number of plants in the field (sowing density)

One of the most critical factors in achieving high corn yields is establishing a sufficient population density, to allow a hybrid to maximize its yield. Check with your seed company representative for optimum planting rates for your hybrids.

The average sowing density recommendations for a hybrid, may normally be exceeded a little bit, when better than average provision in terms of water and nutrients is ensured. Be aware that low densities emphasize on security, while high densities aim at seizing opportunities for higher yields.



8. Sowing date

Plant only when soil conditions are positive for rapid emergence and development. Primary seedling limitations are wet soils and cool soil temperature, but sometimes completely dried out seedbeds as well. If soil conditions are dry, begin sowing before the optimum date but avoid early planting on poorly drained soils.

Wet soil promotes compaction while sowing, particularly around the seed furrow, which will restrict root development. Soil temperature and moisture regulate germination rate. Cool temperatures can greatly hinder stand success and plant growth uniformity, both of which are paramount to high corn productivity.

Be aware, that "cool" can be at different soil temperatures, for different varieties. Especially some hybrids of very high yield limits, sometimes are more sensitive to cold in their first growing phase. You should therefore ask your KWS representative, about any specific need of your hybrid, in terms of sowing date, or minimum temperature needs for germination, and emergence.



9. Planting depth

Follow practices that will enhance stand establishment. Adjust planting depth according to soil conditions! The seed must get into touch with the level where moisture is available. Please monitor planting depth in relation to moisture depth periodically during the planting operation and adjust for varying soil conditions.

Make sure the planter is in good working order. Inspect and adjust the planter to improve stand establishment. Operate planters at speeds that will optimize seed placement. Uneven emergence affects crop performance because late emerging plants cannot compete with larger, early emerging plants.

It is much more important, to get the seed in contact with soil humidity, than having a shallow placement that would allow for rapid emergence. It is better to go deep and follow the water.



10. Weed control

Weeds are invasive, and take away nutrients, space and light from the crops you are trying to grow. Weeds always need to be controlled as early as possible and as often as necessary, chemically and mechanically. Your corn crop can be damaged by weed competition, from 4 leaves up to 9 leaves. It is dangerous to the corn plant, to get in touch with too many chemicals between 7 and 9 leaves, where buds of tassel and cob flowers are formed. Reductions on kernel row number, erroneous fecundation, or a flawed tassel, might be a consequence. Generally, a bigger corn plant will always take up more of the herbicide, than a smaller one.

Your chemical weed management should therefore focus on early stages, i.e. pre-emergence, and /or 3 to 4 leaves. Scouting your fields in time, gives you the opportunity to see if any weeds are cropping up – and to put a stop to them before the problem can get out of hand. Your mechanical weed management can cover the later stages, 6 to 8 leaves.



Plus4GRAIN

Realize your best yields from your best fields



1



More kernel yield per plant

Yield components show better performance in reaction to favorable growth conditions

2



Improved efficiency

Plants convert favorable inputs at higher rates into a superior yield

3



Continuous yield push

Through all phases, key components for yield show superior response



Source: KWS SAAT SE & Co. KGaA

KWS KASHMIR



FAO 400

- Hibrid za zrno sa izuzetno visokim potencijalom za prinos uz istovremeno izraženu stabilnost prinosa
- Otvorenost komušine omogućava brzo otpuštanje vlage iz zrna
- Razgranata metlica omogućava veliku produkciju polena i efikasniju polinaciju
- Efikasno nalivanje zrna
- Dobra tolerancija na fuzarijum klipa i stabla

KWS INTELIGENS



FAO 430

- Plus4GRAIN hibrid sa izraženom stabilnošću prinosa
- Dobar početni porast i izražena tolerancija na primenu herbicida
- Ima sinhronizovano prašenje i svilanje, što utiče na manji stres u fazi cvetanja
- Izražen staygreen
- Dobro nalivanje zrna i dobra popunjenost klipa
- Izražena masa 1000 zrna

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