CAPSTONE Seeds

HYBRID MAIZE

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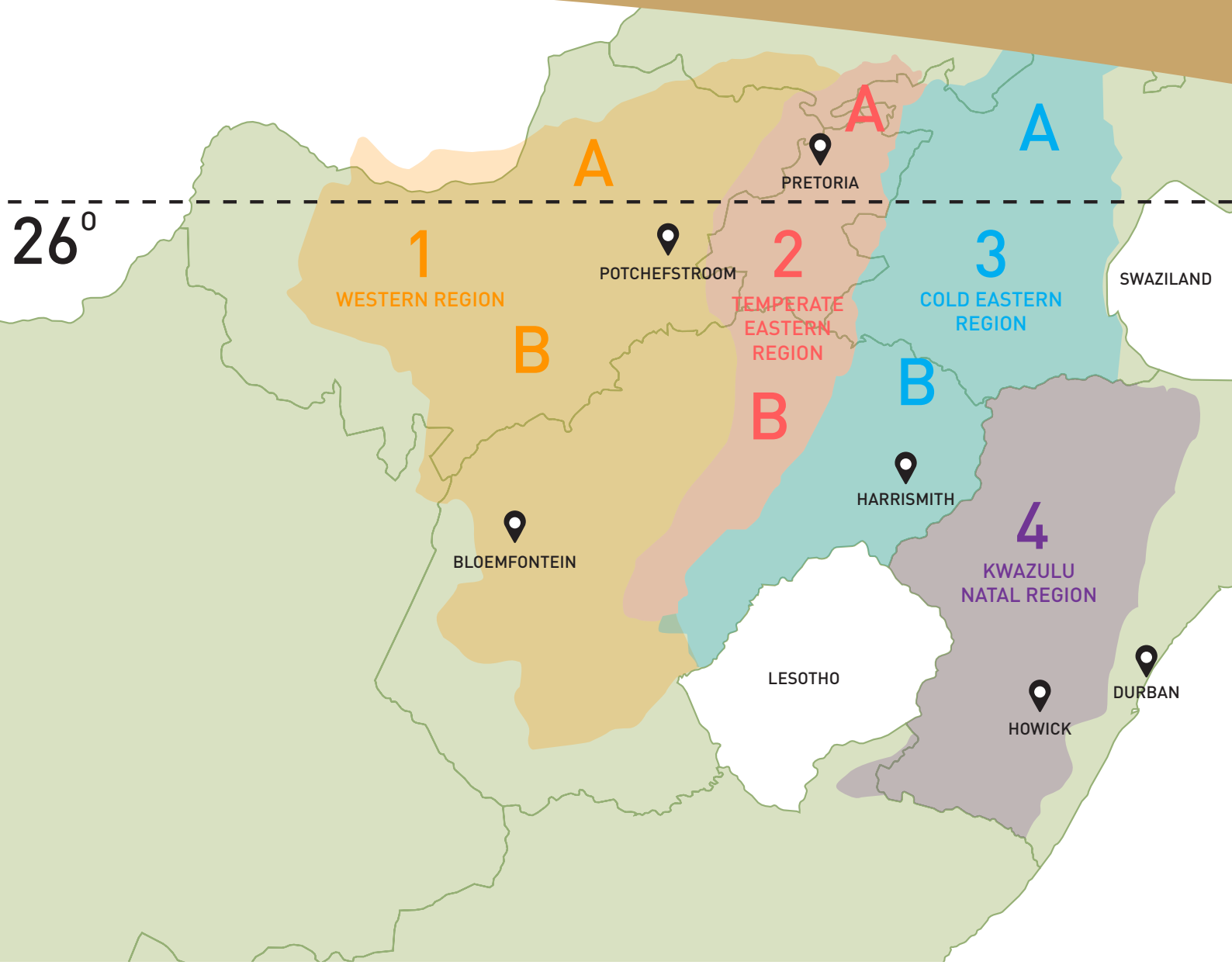



## MAIZE REGIONS - SOUTH AFRICA

- 1 - Western Regions
- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region
- 4 - KwaZulu Natal Region
- 5 - Warm Irrigation Region

# YELLOW HYBRID MAIZE

## CAP 122-60

EARLY MEDIUM LATE

## Excellent silage or grain crop

CAP 122-60 is a medium maturity, highly prolific hybrid. This hybrid has long cylindrical cobs. It is a semi dent grain type. CAP 122-60 gives high grain yields of up to 15mt/ ha when planted under high population density of between 70 000 - 100 000 plants per hectare making a suitable variety in high potential areas under irrigation. It is also suitable for low potential areas under low plant populations due to its' prolificacy.

This hybrid should be sprayed for foliar diseases as it is susceptible. It responds well to fertilizer in high potential areas of the main farming regions of South Africa. CAP 122-60 has 120 -130 days to physiological maturity in warmer areas and 134 days in cooler regions.

- Responds well to fertilizers, irrigation and high pop. density
- Tolerant to Helminthosporium Blight
- Tolerant to Stalk Rot
- Susceptible to Grey leaf spot and rust
- Grain yield of 15 MT/ha has been achieved under pivot
- Silage yield potential of up to +75 MT/ha
- Good protein quality

### CAP122-60 James Kean; Mearns Farm

In the 2014/15 season at Mearns farm in Mooi River, yield estimates that were factored for moisture gave grain yield of 13.2MT/ha.
The plants had two large cobs at a plant population of 55 000 plants per ha

### CAP122-60 Jaco Brandt; Western Cape – Piketberg

Jaco planted 80 000 plants per ha ,ended up with only about 70 000 due to water problems

Piketburg is in a winter rainfall area so he to planted under pivot in Oct 2012

A fungicide was sprayed on the crop

Harvested at the beginning of May and got 12MT and was happy with the grain quality.

Jaco felt that CAP 122-60 would have done better had it not been exposed to moisture.

**2015 Kokstad silage trials**

| Cultivar | Plant population (number/ha) | Dry matter (%) | Dry matter yield |
|---|---|---|---|
| CAP 122-60 | 66 667 | 55.90 | 22 417 |
| CAP 9001 | 64 444 | 48.72 | 18 372 |
| CAP 9004 | 66 667 | 47.67 | 25 312 |
| CAP 9021 | 66 111 | 47.75 | 24 474 |
| **Mean** | **65 833** | **55.41** | **22 833** |
| LSD (P≤ 0.05) | 3 211.2 | 6.9 | 4 965 |
| CV (%) | 3.0 | 7.6 | 13.2 |

Recommended for regions:

- 1 - Western Regions
- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region
- 4 - KwaZulu Natal Region

| Location | Hybrid | Multiple Years Yield Data Combined | Head to Head DKC73-72 | Head to Head CRN3505 |
|---|---|---|---|---|
| Beinsvlei | CAP122-60 | 5041,5 | 107,3801917 | 130,5073777 |
| Kroonstad | CAP122-60 | 6897,5 | 109,8677923 | 106,6816178 |
| Kriel | CAP122-60 | 7576,67 | 99,20132676 | |
| Delmas | CAP122-60 | 7867 | 94,63870399 | |
| Clarens | CAP122-60 | 8316,75 | 99,29558547 | |
| Middelburg | CAP122-60 | 6597 | 98,74270319 | 117,1758437 |
| Winterton | CAP122-60 | 6876,67 | 99,51760733 | 102,2654043 |

SONOP BOERDERY - RIETZ 2013/14

| Cultivars | Plant Population | Moisture (%) | Yield (kg) | Index |
|---|---|---|---|---|
| CAP122-60 | 28900 | 14.7 | 4757.90 | 128.71 |
| PAN6Q308 | 28900 | 15 | 4702.62 | 127.21 |
| P2432R | 28900 | 14.8 | 4427.24 | 119.76 |
| PAN4P228 | 28900 | 13.1 | 3807.50 | 103.00 |
| P1973B | 28900 | 13.9 | 3762.85 | 101.79 |
| DKC73-74BR | 28900 | 13.3 | 3731.59 | 100.95 |
| LS8524R | 28900 | 12.5 | 3520.47 | 95.23 |
| US9610 | 28900 | 14.2 | 3370.55 | 91.18 |
| LS8538R | 28900 | 13.3 | 3278.18 | 88.68 |
| DKC73-70B | 28900 | 13.2 | 3059.64 | 82.77 |
| US9690 | 28900 | 14.5 | 3035.77 | 82.12 |
| KKS8410BR | 28900 | 14 | 2960.41 | 80.08 |
| US9620 | 28900 | 13 | 2875.44 | 77.79 |
| KKS84412B | 28900 | 13.9 | 2868.09 | 77.59 |
| LS8532B | 28900 | 12.5 | 2602.96 | 70.41 |
| LS8536B | 28900 | 13.5 | 2450.49 | 66.29 |
| US9640 | 28900 | 12.9 | 2276.97 | 61.60 |
| US9670 | 28900 | 14.6 | 2274.29 | 61.52 |
| LS8518 | 28900 | 14.8 | 1988.61 | 53.80 |

QPM

# YELLOW HYBRID MAIZE

## CAP 90-06Q

EARLY MEDIUM LATE

## Highly adaptable hybrid

CAP 90-06Q is a quality protein, yellow maize hybrid. It is used primarily as a silage hybrid, with deep yellow kernels. It has excellent disease tolerance to both cob rot and various leaf diseases.

This variety has approximately 75 days till it is at 50% flower and approximately 130 days till maturity. The plant reaches a height of 150cm with excellent stand-ability. This will vary from area to area depending on heat units.

It has good tolerance to foliar diseases. This will be an ideal variety for poultry and pig farmers who would like to use the QPM as grain for animal feed.

Yields of 9mt are achievable in high potential regions.

| Site | Yield | RelGY | Prolificacy rating | Lodged plants | Shelling percentage |
|---|---|---|---|---|---|
| | t/ha | % | 1-2 | % | % |
| Baynesfield | 9.6 | 123 | 2 | 0 | 84 |
| Ukulinga (Pietermaritzburg) | 8.5 | 122 | 1.9 | 0 | 83 |

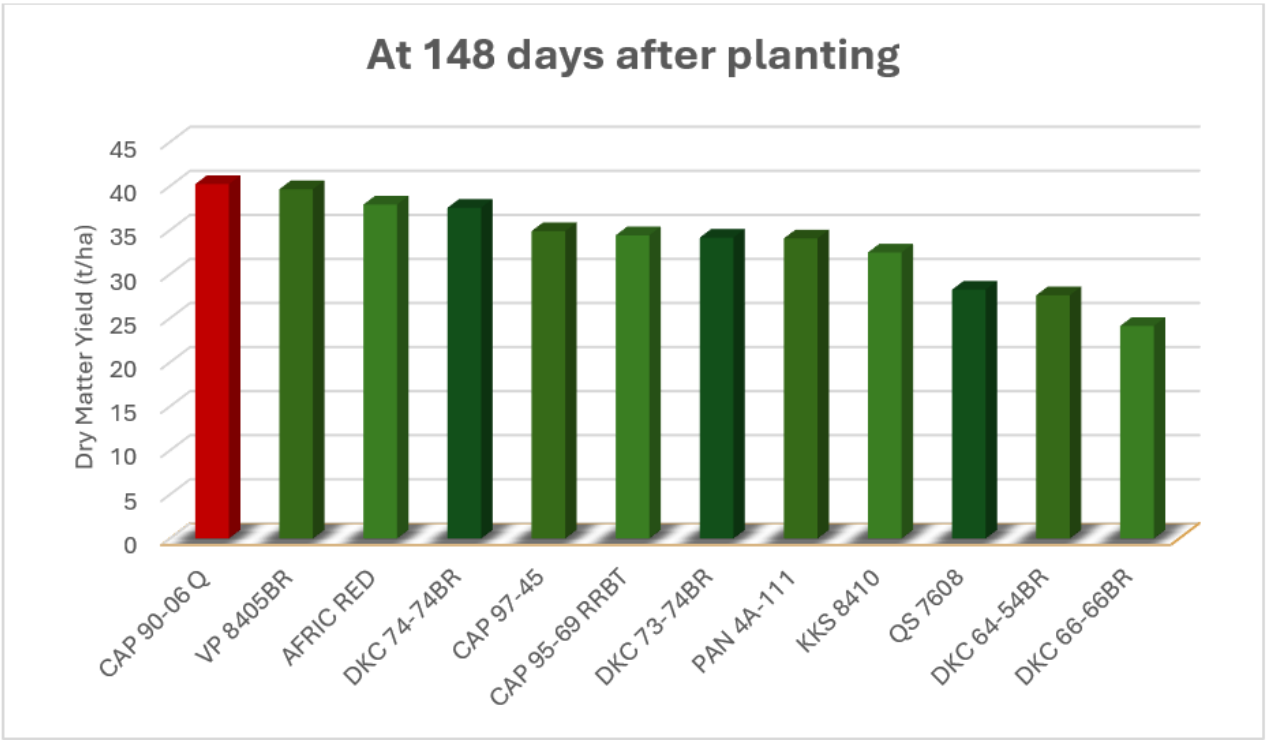
- Very good standability
- Good adaptability
- Excellent resistance to leaf diseases
- Primarily a silage hybrid, unless specifically used for grain for pig and poultry

### Recommended for regions:

- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region
- 4 - KwaZulu Natal Region

## SILAGE YIELD OF THE HYBRIDS HARVESTED AT 148 DAYS AFTER PLANTING AT CEDARA, 2023/2024

| At 148 days after planting | | Ranking | |
|---|---|---|---|
| Hybrids | Yield (t/ha) | In this group | Overall in the trial of 44 |
| CAP 90-06 Q | 40,22 | 1 | 5 |
| VP 8405BR | 39,64 | 2 | 6 |
| AFRIC RED | 37,90 | 3 | 9 |
| DKC 74-74BR | 37,54 | 4 | 10 |
| CAP 97-45 | 34,89 | 5 | 14 |
| CAP 95-69 RRBT | 34,41 | 6 | 15 |
| DKC 73-74BR | 34,15 | 7 | 17 |
| PAN 4A-111 | 34,06 | 8 | 18 |
| KKS 8410 | 32,47 | 9 | 20 |
| QS 7608 | 28,24 | 10 | 28 |
| DKC 64-54BR | 27,60 | 11 | 30 |
| DKC 66-66BR | 24,13 | 12 | 35 |



# YELLOW HYBRID MAIZE

## CAP 96-46

EARLY MEDIUM LATE

## Highly adaptable hybrid

Medium-late maturity. ± 130 – 135 days.

Prolific. At least 2 cobs per plant.

Shelling percentage van 83%

Medium Sprouts

Good standability

Good resistance against Diplodia cob rot

Relatively good resistance against HT and GLS

Yield of 11.15 t/ha during 2015/16 season and 7% above average.

Yield of 12.96 t/ha @ 36 000 plants/ha in Delmas during 2016/17 season and 17% above average

### Recommended for regions:

- 1 - Western Regions
- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region
- 4 - KwaZulu Natal Region

# YELLOW HYBRID MAIZE

## CAP 9444 NG

EARLY MEDIUM LATE

## Yellow semi flint hybrid

CAP 9444 NG medium maturing variety with approximately 120 - 135 days to maturity. It is moderately resistant to Leaf Blight (H.t), Rust and most common maize diseases. CAP 9444 NG is not recommended in areas with a high incidence of G.L.S., unless a strict preventative spray program is adhered to.

CAP 9444 NG will tolerate stressful drought conditions and has a yield potential of above 8 tons per hectare, out yielding major competitors in trials to date.

CAP 9444 NG can have up to 3 cobs per plant and produces good yields even under low plant populations. A cob can have 16 rows with 45 kernels per row (720 kernels per cob).

Trials yield per hectare:

- 8 tons of dry land with a 45 000 PS
- 11 tons of irrigation up to 80 000 PS

- Very good standability
- Very dense grain
- High shelling percentage
- Good husk cover
- Hard orange grain

### Recommended for regions:

- 1 - Western Regions
- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region
- 4 - KwaZulu Natal Region

## GUY DAUGHERTY - 2024/2025 - BERGVILLE

Maize Streak Virus Rating
1 = Excellent tolerance to MSV
9 = Highly susceptible to MSV

| Hybrids | MSV rating |
|---|---|
| CAP 90-01 | 2 |
| CAP 99-43 | 2 |
| CAP 90-21 | 2 |
| CAP 95-22 | 2 |
| CAP 90-06 | 5 |
| CAP 9444 NG | 5 |
| Commercial Silage Hybrid | 9 |

| Silage Yield from Midmar-KZN | | | | | |
|---|---|---|---|---|---|
| **KULTIVAR** | TON/HA | VOG % | % PROEF | % KONTROLE | RANK |
| **DKC 64-78BR** | 63.86 | 54.71 | 115.40 | 125.01 | 1 |
| **CAP 9444 NG** | 60.05 | 65.88 | 108.51 | 117.55 | 2 |
| **PAN 4P-116** | 59.76 | 61.54 | 108.00 | 116.99 | 3 |
| **PAN 4P-316B** | 58.36 | 64.90 | 105.48 | 114.26 | 4 |
| **LS 8524R** | 56.81 | 64.75 | 102.67 | 111.21 | 5 |
| **PAN 3P-502R** | 56.75 | 63.80 | 102.57 | 111.10 | 6 |
| **PHB 1615R** | 54.66 | 60.00 | 98.77 | 107.00 | 7 |
| **DKC 62-80BR** | 53.60 | 61.04 | 96.87 | 104.94 | 8 |
| **DKC 66-32B** | 51.39 | 55.92 | 92.87 | 100.60 | 9 |
| **LS 8527BR** | 49.21 | 61.07 | 88.93 | 96.33 | 10 |

NELSON'S GENETICS TRIALS, BETHLEHEM 2010
PLOTSIZE:11.52M*M. POP:27 800 PL/HA. PLANT 19 NOVEMBER 2010
YPERC=YIELD as % of (DKC80-10,PHB32W71 & KKS4410)/3

| Variety | Yield | Rank | YPERC | Moisture % | Tillers |
|---|---|---|---|---|---|
| DKC80-10 | 8.14 | 1 | 113 | 11.83 | 17 |
| CAP 9444 NG | 7.11 | 3 | 99 | 14.32 | 20 |
| CAP122-60 | 7.05 | 4 | 98 | 13.94 | 8 |
| PHB32W71 | 6.95 | 5 | 97 | 12.62 | 14 |
| KKS4410 | 6.47 | 11 | 90 | 12.55 | 9 |
| KKS4520 | 6.18 | 16 | 86 | 14.99 | 4 |
| MEAN | 6.35 | | 100 | 14.68 | 14 |

# YELLOW HYBRID MAIZE

## CAP 95-22

EARLY — MEDIUM — LATE

## Excellent silage or grain crop

CAP 95-22 is a medium maturity, prolific hybrid. This hybrid has long cylindrical cobs with a semi dent grain. The hybrid has large plants.

Our yellow hybrid, CAP 95-22 can give high grain yields of up to 12mt/ha when planted under high population density of between 60 000 - 70 000 plants per hectare making a suitable hybrid in higher potential areas under irrigation.

It is also suitable for low potential areas under low plant populations due to its' prolificacy.

Excellent resistance to MSV, acceptable resistance to PHAEO, and susceptible to GLS and NLB. It responds well to fertilizer in high potential areas of the main farming regions of South Africa.

CAP 95-22 takes 120 -130 days to physiological maturity in the warmer areas and 134 days in the cooler areas.

Trials yield per hectare:

- 7.5 tons of dry land with a 45 000 plants/ha
- 11.5 tons of irrigation up to 80,000 plants/ha

### Recommended for regions:

- 1 - Western Regions
- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region
- 4 - KwaZulu Natal Region

- Responds well to fertilizers, irrigation and fairly high population density
- Excellent resistance to MSV, acceptable resistance to PHAEO, and susceptible to GLS and NLB. Please follow a good spray program
- Tolerant to Stalk Rot and lodging
- High grain yield of 12mt/ha
- Good drought tolerance


## CAPSTONE HYBRIDS DISEASE RATINGS '23/'24 & '24/'25

**1 = Excellent disease tolerance**
**9 = Highly susceptible to disease**

| | DISEASE RATINGS | | | |
|---|---|---|---|---|
| HYBRIDS | PHAEO (Phaeosphaeria) | GLS (Grey Leaf Spot) | NLB (Northern Leaf Blight) | MSV (Maize Streak Virus) |
| CAP 99-43 | 1 | 1 | 1 | 2 |
| CAP 90-01 | 2 | 3 | 2 | 2 |
| CAP 90-21 | 2 | 3 | 2 | 2 |
| CAP 95-22 | 4 | 4 | 2 | 2 |
| Susceptible Control Hybrid | 9 | 9 | 9 | 9 |

## SILAGE AGRONOMIC DATA '23/'24

| HYBRIDS | Combined Wet Silage t/ha | BALGOWAN | BALGOWAN | MOOIRIVER | BALGOWAN | WINTERTON |
|---|---|---|---|---|---|---|
| | | Days to Silage Cutting | Wet Silage t/ha | | Ear Dry Down | Stay Green |
| CAP 99-43 | 75.6 | 165 | 70.1 | 81 | 9 | 5 |
| LAKE 401 | 67.5 | 140 | 56.9 | 78.1 | 3 | 8 |
| SC 506 | 51.5 | 140 | 36.1 | 66.85 | 3 | 5 |
| CAP 95-22 | 45.8 | 150 | 50.1 | 41.46 | 9 | 5 |

# BREEDING FOR **CLIMATE CHANGE,** THE **ENVIRONMENT** AND THE **FARMER**

# WHITE HYBRID MAIZE

## CAP 99-43

EARLY MEDIUM LATE

## SILAGE KING

CAP 99-43 is a late maturing hybrid with a high silage yield potential. It is an excellent silage maize due to a lot of plant material and slow drying. This hybrid has excellent standability and has been widely adapted throughout South Africa. IIt shows excellent resistance to Maize Streak Virus, Grey Leaf Spot, Northrn Leaf Blight and Phaeosphaeria Maydis, thus requiring no or minimal fungicide applications. It has a high grain yield potential of more than 14 t/ha in certain parts of Kwazulu-Natal and South Africa. It is also adaptable in other areas with reasonable rainfall expectation.

**Steve Thompson next to a commercial silage crop of CAP 99-43, planted at Lissadell Farm, Estcourt- March 2025**

### GUY DAUGHERTY 2024/2025 - BERGVILLE

1 = excellent disease tolerance
9 = highly susceptible to disease

| HYBRIDS | MAIZE STREAK VIRUS RATING |
|---|---|
| CAP 90-01 | 2 |
| CAP 99-43 | 2 |
| CAP 90-21 | 2 |
| CAP 95-22 | 2 |
| CAP 9444 NG | 5 |
| Commercial Silage Hybrid | 9 |

### SHANE DRIEMEYER EXPERIMENTAL PLOTS WINTERTON

PLANTED 18/10/24

HARVESTED 24/2/25 = 126 DAYS (EARLY)

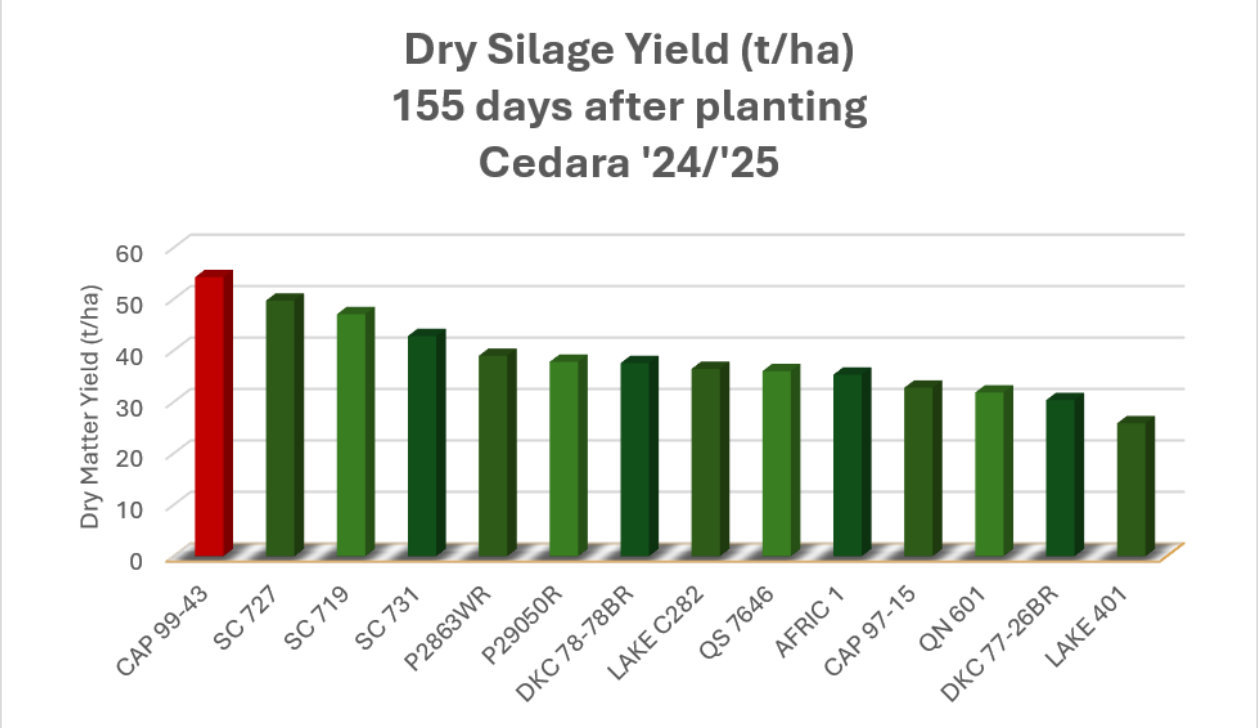
| HYBRIDS | YIELD t/ha |
|---|---|
| SC 719 | 79.6 |
| CAP 99-43 | 76.6 |

### LISSADELL FARM, ESTCOURT MARCH 2025 HARVEST

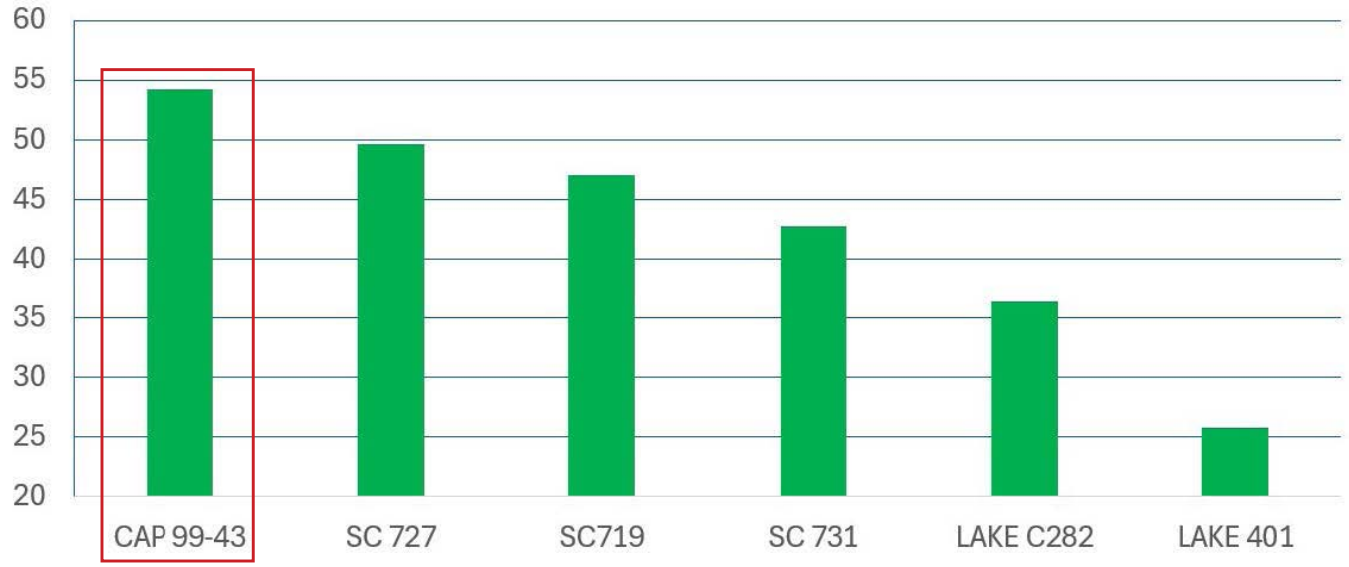
**70 000 plants per hectare**
**70-80 ton/ha est. wet silage yield**

## SILAGE YIELD OF THE LATE MATURING HYBRIDS HARVESTED 155 DAYS AFTER PLANTING AT CEDARA 23/24

| At 155 days after planting | | Rank |
|---|---|---|
| Hybrids | Silage Yield (t/ha) | Overall in the trial of 44 hybrids |
| CAP 99-43 | 54,25 | 1 |
| SC 727 | 49,68 | 2 |
| SC 719 | 47,04 | 3 |
| SC 731 | 42,79 | 4 |
| P2863WR | 38,95 | 7 |
| P29050R | 37,78 | 8 |
| DKC 78-78BR | 37,54 | 16 |
| LAKE C282 | 36,41 | 11 |
| QS 7646 | 35,98 | 12 |
| AFRIC 1 | 35,28 | 13 |
| CAP 97-15 | 32,74 | 19 |
| QN 601 | 31,82 | 22 |
| DKC 77-26BR | 30,34 | 25 |
| LAKE 401 | 25,83 | 34 |



## CEDARA '23/'24 155 DAY CUT SILAGE t/ha




## CAPSTONE HYBRIDS DISEASE RATINGS '23/'24 & '24/'25

1 = excellent disease tolerance
9 = highly susceptible to disease

| | DISEASE RATINGS | | | |
|---|---|---|---|---|
| HYBRIDS | PHAEO (Phaeosphaeria) | GLS (Grey Leaf Spot) | NLB (Northern Leaf Blight) | MSV (Maize Streak Virus) |
| CAP 99-43 | 1 | 1 | 1 | 2 |
| CAP 90-01 | 2 | 3 | 2 | 2 |
| CAP 90-21 | 2 | 3 | 2 | 2 |
| CAP 95-22 | 4 | 4 | 2 | 2 |
| Susceptible Control Hybrid | 9 | 9 | 9 | 9 |

## SILAGE AGRONOMIC DATA '23/'24

| HYBRIDS | Combined Wet Silage t/ha | BALGOWAN | BALGOWAN | MOOIRIVER | BALGOWAN | WINTERTON |
|---|---|---|---|---|---|---|
| | | Days to Silage Cutting | Wet Silage t/ha | | Ear Dry Down | Stay Green |
| CAP 99-43 | 75.6 | 165 | 70.1 | 81 | 9 | 5 |
| LAKE 401 | 67.5 | 140 | 56.9 | 78.1 | 3 | 8 |
| SC 506 | 51.5 | 140 | 36.1 | 66.85 | 3 | 5 |
| CAP 95-22 | 45.8 | 150 | 50.1 | 41.46 | 9 | 5 |

# WHITE HYBRID MAIZE

## CAP 95-03

EARLY MEDIUM LATE

## Widely adapted hybrid

CAP 9503 is a widely adapted variety of white hybrid maize which is new to the Capstone stable of maize hybrids.

This hybrid has been recently registered in the SADAC region and is expected to do well in coastal and inland areas of Southern Africa.

It is a medium to late maturing grain variety with good husk cover. The variety has good drought tolerance but can be grown under irrigation or dryland conditions. Yield can be up to 12 tons per hectare in good conditions and has excellent resistance to Grey leaf spot.

The variety is highly adaptable and is currently grown across many regions in Southern Africa.

- Drought tolerant variety
- High production hybrid
- Strong tolerance to diseases
- Good husk cover
- Highly adapted for many conditions

# WHITE HYBRID MAIZE

## CAP 90-21

EARLY MEDIUM LATE

### All round performer

CAP 90-21 is a high yielding hybrid which performs well in high potential regions. This hybrid has done well as a silage variety. It has been noted to have grain yields of over 10mt/ha as the norm. Silage yield potential of between 65-80mt/ha under ideal conditions.

It has flinty grain type with excellent milling quality too. It also has good resistance to Grey Leaf Spot, ear rot and rust. This variety is medium maturing North of 26 latitude and becomes late maturing to the South of that, where it is mainly used for silage. CAP 90-21 has a tall plant structure and generally produces one large ear. We recommenced it for 1A, 2A, and 3A for grain and region 4 for silage.

| High Potential Dryland Conditions with >700mm Precipitation | CAP90-21 | SC633 |
|---|---|---|
| Grain Yield (t/ha) | 10.3 | 9.45 |
| Anthesis (days) | 83 | 77 |
| Height (cm) | 286 | 236 |
| Ear position | 0.5 | 0.52 |
| Root lodging (%) | 0 | 32 |
| Stem lodging (%) | 4 | 1 |
| Husk cover (%) | 4.2 | 8.3 |
| Ear rot (%) | 1.6 | 2.3 |
| Gray leaf spot (1-5) | 1 | 1.3 |
| Common rust (1-5) | 1 | 1 |
| Northern corn leaf blight (1-5) | 2 | 2.3 |
| Grain texture (1-5) | 4.5 | 4.5 |

*1=Bad | 5= Good

### 2015 Kokstad silage trials

| Cultivar | Plant population (number/ha) | Dry matter (%) | Dry matter yield |
|---|---|---|---|
| CAP 122-60 | 66 667 | 55.90 | 22 417 |
| CAP 90-01 | 64 444 | 48.72 | 18 372 |
| CAP 90-04 | 66 667 | 47.67 | 25 312 |
| CAP 90-21 | 66 111 | 47.75 | 24 474 |
| **Mean** | **65 833** | **55.41** | **22 833** |
| LSD (P≤ 0.05) | 3 211.2 | 6.9 | 4 965 |
| CV (%) | 3.0 | 7.6 | 13.2 |

- Medium to late maturity- plant early: 120 - 135 days
- Semi-flint, large kernels
- Tall and leafy plant structure: 2.2 - 2.8m plant height
- Resistant to most foliar diseases
- Recommended plant population 48 000 plants/ha

### Recommended for regions:

- 1 - Western Regions
- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region
- 4 - KwaZulu Natal Region

*SILAGE IN ALL REGIONS

*HIGHLY RECOMENDED FOR KZN

## CAPSTONE HYBRIDS DISEASE RATINGS '23/'24 & '24/'25

1 = excellent disease tolerance
9 = highly susceptible to disease

| | DISEASE RATINGS | | | |
|---|---|---|---|---|
| HYBRIDS | PHAEO (Phaeosphaeria) | GLS (Grey Leaf Spot) | NLB (Northern Leaf Blight) | MSV (Maize Streak Virus) |
| CAP 99-43 | 1 | 1 | 1 | 2 |
| CAP 90-01 | 2 | 3 | 2 | 2 |
| CAP 90-21 | 2 | 3 | 2 | 2 |
| CAP 95-22 | 4 | 4 | 2 | 2 |
| Susceptible Control Hybrid | 9 | 9 | 9 | 9 |

## GUY DAUGHERTY - 2024/2025 - BERGVILLE

1 = excellent disease tolerance
9 = highly susceptible to disease

| HYBRIDS | MAIZE STREAK VIRUS RATING |
|---|---|
| CAP 90-01 | 2 |
| CAP 99-43 | 2 |
| CAP 90-21 | 2 |
| CAP 95-22 | 2 |
| Commercial Silage Hybrid | 9 |

# WHITE HYBRID MAIZE

## CAP 90-01

EARLY MEDIUM LATE

### Widely adapted hybrid

CAP 90-01 is widely adapted for all Southern African conditions. It is tolerant to most maize diseases in Southern and Eastern Africa.

It has a high potential of yielding over 14mt/ha in certain areas of Kwazulu-Natal, South Africa. It is also adapted to other areas with reasonable rainfall expectations.

It has excellent disease resistance making this hybrid suited to high disease pressure areas.

Capstone Seeds recommends that, in order to maximize the yield, one should plant early.

CAP 90-01 is a tall late hybrid south of 26 latitude and medium maturing as you travel north of this. It has high yields under irrigation and good performance under dry-land conditions. It is widely utilized for grain as well as for silage in certain areas, this is due to CAP 90-01 being a tall leafy plant producing high amounts of dry matter and starch per hectare.

- Utilized for grain and silage
- Yield under Irrigation up to 15 tons per hectare
- Yield in dry land 9-11 tons per hectare
- Silage potential 65 - 70 tons per hectare.
- Medium maturing hybrid: 135-145 days
- Tall with white flint grain

### Recommended for regions:

- 1 - Western Regions
- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region

RECOMMENDED FOR SILAGE KZN

- 4 - KwaZulu Natal Region

## CAPSTONE HYBRIDS DISEASE RATINGS '23/'24 & '24/'25

1 = excellent disease tolerance
9 = highly susceptible to disease

| | DISEASE RATINGS | | | |
|---|---|---|---|---|
| HYBRIDS | PHAEO (Phaeosphaeria) | GLS (Grey Leaf Spot) | NLB (Northern Leaf Blight) | MSV (Maize Streak Virus) |
| CAP 99-43 | 1 | 1 | 1 | 2 |
| CAP 90-01 | 2 | 3 | 2 | 2 |
| CAP 90-21 | 2 | 3 | 2 | 2 |
| CAP 95-22 | 4 | 4 | 2 | 2 |
| Susceptible Control Hybrid | 9 | 9 | 9 | 9 |

## GUY DAUGHERTY - 2024/2025 - BERGVILLE

1 = excellent disease tolerance
9 = highly susceptible to disease

| HYBRIDS | MAIZE STREAK VIRUS RATING |
|---|---|
| CAP 90-01 | 2 |
| CAP 99-43 | 2 |
| CAP 90-21 | 2 |
| CAP 95-22 | 2 |
| CAP 90-06 | 5 |
| CAP 9444 NG | 5 |
| Commercial Silage Hybrid | 9 |

| Variety | Anthesis | Mid Altitude | | N-Stress | Ear position | Lodging | | Husk cover | Ear rot | GLS | Common rust | Northern leaf blight | Grain texture | MSV | PLS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Days | Dry t/ha | Humid warm t/ha | t/ha | 0-1 | Root % | | % | % | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 |
| CAP 90-01 | 68 | 4.52 | 7.13 | 2.29 | 0.52 | 7.6 | 11.8 | 3.5 | 5.2 | 1.5 | 1.1 | 2.3 | 3.4 | 2 | 1.1 |
| PAN63 | 68 | 4.39 | 6.98 | 1.43 | 0.49 | 9.5 | 10.4 | 5.8 | 4.7 | 1.9 | 1.3 | 2 | 2.9 | 1.9 | 1.3 |
| PAN5M-35 | 68 | 4.69 | 7.54 | 3.22 | 0.47 | 5.4 | 7.9 | 3.9 | 4.6 | 1.9 | 1.1 | 1.5 | 2.5 | 1.5 | 1.3 |

**N stress –** trials conducted under conditions with nitrogen stress
**Husk cover –** Percentage of plants with ears that are not completely covered by the husks
**Ear rot –** Percentage of cobs that are rotten
**GLS-** Score for the severity of gray leaf spot from 1 (clean, no infection) to 5 (severely diseased)
**MSV-** Score for the severity of maize streak virus from 1 (clean, no infection) to 5 (severely diseased)
**Grain Text-** Rated on a scale from 1(flint) to 5 (Dent)

# WHITE HYBRID MAIZE

## CAP 96-19

EARLY — MEDIUM — LATE

## High yielding, dual purposes white hybrid

**GRAIN | SILAGE**

- Medium maturity: 120-130 days
- Semi-flint, large kernels
- Tall and leafy plant structure Resistant to most foliar diseases

CAP 96-19 is a high yielding white hybrid. This hybrid has a long pollination period increasing its ability to evade the effects of moisture stress during flowering. The plant structure and cobs are generally large

It is noted as being a medium maturing variety with semi-flint, large kernels. It is tall and leafy in plant structure with large cobs. Suitable as a green mealie.

It is resistant to most foliar diseases and yields approximately 10mt.

| Variety | Anthesis | Mid Altitude | | N-Stree | Ear Position | Lodging | | Husk Cover | Ear Rot | GLS | Common Rust | Northern Leaf Blight | Grain Texture | MSV | PLS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | dae | t/ha | t/ha | | 0-1 | wortel % | stam % | % | % | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 |
| CAP6-19 | 65-85 | 6.5 | 7.1 | 3.9 | 0.5 | 12.2 | 9.1 | 8.2 | 1.4 | 1.5 | 2.0 | 2.0 | 3.0 | 2.0 | 1.5 |

Mid altitude dry – Average maximum temperature of between 24-33 degrees and season precipitation of less than 700mm

Mid altitude humid – Average maximum temperature between 25-28 degrees and season precipitation of more than 700mm

N stress – trials conducted under conditions with nitrogen stress

Husk cover – Percentage of plants with ears that are not completely covered by the husks

Ear rot – Percentage of cobs that are rotten

GLS- Score for the severity of gray leaf spot from 1 (clean, no infection) to 5 (severely diseased)

MSV- Score for the severity of maize streak virus from 1 (clean, no infection) to 5 (severely diseased)

Grain Texture- Rated on a scale from 1(flint) to 5 (Dent)

PLS- Score for the severity of Phaeosphaeria leaf spot symptoms rated on a scale from 1 (= clean, no infection) to 5 (= severely diseased).

*ELSEWHERE AS A GREEN MEALIE AND GRAIN UNDER HIGH STRESSED AREAS.

### Recommended for regions:

PLANT EARLY

- 1 - Western Regions
- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region

RECOMENDED FOR SILAGE KZN

- 4 - KwaZulu Natal Region

# WHITE HYBRID MAIZE

## CAP 97-15

EARLY MEDIUM LATE

## OVERVIEW

CAP 97-15 is a high yielding conventional white grain hybrid which performs well in high potential regions.

Research shows that this hybrid yields more than 22% above average.

Very good leaf disease tolerance against Grey Leaf Spot(GLS), Northern Corn Leaf Blight(HT), Phaeosphaeria Leaf Spot and Common Rust.

Very good cob disease tolerance against Diplodia Cob Rot and Fusarium.

CAP 97-15 is a leafy plant which can also be used as **Silage**.

Because of the slow drydown period, long shank, large cob and kernels, this variety can definitely be considered as a **Green Mielie.**

The long drydown is also ideal for silage with contractors that can not always be in time to harvest.

- Medium-Late maturity.
- Days to flowering: 70 - 87 days
- Days to physiologic maturity: 135 - 145 days
- Excellent Standability.

# WHITE HYBRID MAIZE

## CAP 97-45

EARLY MEDIUM LATE

## Overview

Medium maturity. 125 – 130 days.

Prolificacy is 2.05 cobs per plant.

Shelling percentage of 87%

16% Tillers

Good standability

Good resistance against Diplodia cob rot

Good resistance against HT and GLS

Yield of 10.46 t/ha in Delmas during 2015/16 season and 11% above average.

Yield of 13.21 t/ha in Delmas during 2016/17 and 21% above average

Yield of 7.15 t/ha in Delmas during a very dry season and still 6% above average of the trial

# WHITE HYBRID MAIZE

## CAP 341 NG

EARLY — MEDIUM — LATE

## High Reliability

CAP 341 NG is a highly reliable short season hybrid, having good germination and seedling emergence properties, resulting in good plant stands. Good pollen to silk synchronization results in good pollination even under drought stress conditions.

CAP 341 NG is very suitable for home consumption, both as a green mealie and mealie meal for porridge due to its large kernel size.

It has white, large Dent Grain and is early to medium maturing. It has good germination and seedling emergence leading to good plant stands. It has good resistance to Leaf Blight (Ht) and Rust. It should not be grown in areas with heavy GLS infection. CAP 341 provides stable yields under drought stress conditions. It is a good all-round performer but is not recommended for Kalahari sand soil types.

- Early - medium maturing
- Good Germination
- Stable Yields under Drought Stress Conditions
- Good resistance to Leaf Blight (Ht) and Rust

### Recommended for regions:

- 1 - Western Regions
- 2 - Temperate Eastern Regions
- 3 - Cold Eastern Region
- 4 - KwaZulu Natal Region

# SILAGE MAIZE

## GROWING MAIZE FOR SILAGE

**Growing a maize crop like the photo to the right does not just happen. But is achievable if key management principles are applied.**

We need to get the basics [ABC's) right!

The ABC of a successful maize crop for silage:

A Establishment  B Irrigation  C Fertilisation

## ESTABLISHMENT

**Selecting the right hybrid**
**Soil preparation and sowing**
**Density and row spacing**
**Weed and insect control**

**Choice of hybrid depends on the intended use.**
**Hybrids for silage production need to be selected for:**

- Continued growth during the season [maximum yield OM/ha].
- Retention of a high proportion of green leaf through to harvest.
- Good grain yields; which contains 70% more ME and greater carbohydrate levels than the green parts of the plant.
- Tolerance of relatively dense planting.
- High dry matter yields are as important as grain yield.

**Capstone Seeds Hybrids of choice for Silage:**

- CAP122-60 - up to 75 MT/ha
- CAP9006Q
- CAP9004 - up to 70 MT/ha [all regions]
- CAP9-522
- CAP9-619 [KZN]
- CAP9299
- CAP9009 [KZN]
- CAP9001 - up to 70MT/ha [KZN]
- CAP9021 - up to 80MT/ha [all regions]

**Soil preparation and sowing**

Maize can be direct drilled or sown into a cultivated soil bed. The advantages of cultivating are that it enables the soil to be deep ripped [clay soils may need this every 2 or 3 years] and the bulk of the fertiliser can be incorporated into the soil prior to sowing.

Direct drilling is only recommended with a 'true· direct-drilling machine, to ensure appropriate depth of the seed [2.5-4 cm], with fertiliser placed about 5 cm deeper and 5 cm to the side of the seed, and with an individual compacting wheel for each seed box.

**Density and row spacing**

Maize plant populations for silage production in irrigated crops should be 80,000 - 100,000 plants/ha but allow for -10% more seed for germination and seedling losses.

High plant densities are even more important if maize is sown early when cooler temperatures will slow growth. This is because higher densities can help to achieve canopy closure sooner, minimising opportunities for weed to establish and maximising radiation absorption.

**Weed and insect control**

Weeds compete strnogly: for sunlight, moisture and nutrients, therefore reducing production and quality. Grass weeds are most competitivQ aod must be controlled early. Shallow inter- row cultivation can destroy young weeds in the first 3-4 weeks after sowing. Once the maize crop reaches approximately 80cm the plants will restrict weed growth as it out competes them for sunlight.

# IRRIGATION

## Requirements
## Critial period

### Requirements

Maize has a high requirement for water due to its high yields [grain and total plant dry matter]. Because of these high yields it is one of the most efficient users of water per kg dry matter produced. It would require between 5 -7 megalitres [ML] [or approximately 550 - 650mm of water] depending on seasonal conditions, to grow a high yielding crop. The irrigation system must be able to put out approximately 25mm/week, and the soil profile field capacity.

### Critical period

The maize crop uses the majority [70%] of its water requirement 3 weeks either side of tasselling Therefore if irrigation is limited, it is absolutely crucial to irrigate during the critical period, from about 2-3 weeks before tasselling until 2- 4 weeks after tasselling.

# FERTILISATION

## Nutritional requirements
## Fertiliser timing

### Nutritional requirements

Maize prefers well drained soils with neutral to mildly acidic pH. Because of its high yields.Maize is a big user of nutrients. Soil type coupled with previous cropping and fertiliser history will have an impact on fertiliser requirements for maize crops. Soil tests should be done prior to planting and should be used in conjunction with the target yield to determine optimal fertilizer application.

For example, a maize silage crop yield of 25tDM/ha will remove approximately 300-320kg/ha Nitrogen; 250-270 kg/ha Potassium; and 70-80 kg/ha Phosphorus.

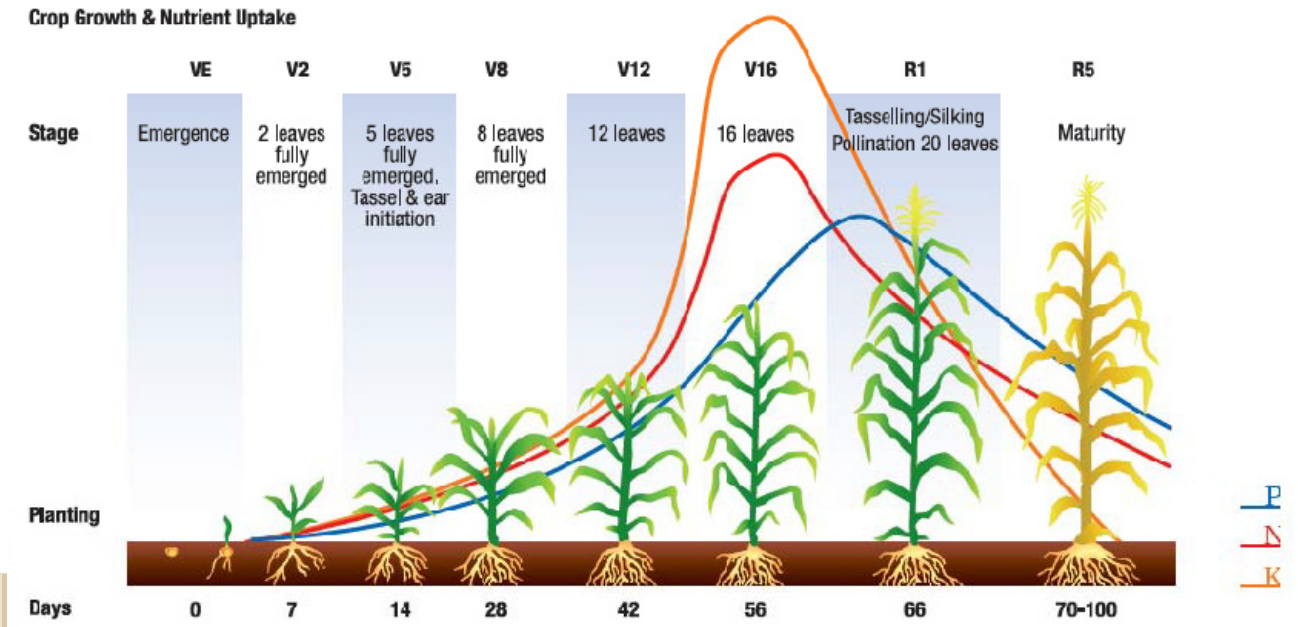
**This roughly equates to the following kg of nutrient per tonne of crop grown:**

10-12 kg grown Nitrogen/t DM • 8-10 kg grown Potassium/t DM • 2-3 kg Phosphorus/t DM grown

As a rule of thumb, aim to apply at least 80% of these amounts as fertilizer.

### Fertisiler timing

The maize plant utilises nutrients throughout its growing cycle with the greatest requirement when the plant is growing most rapidly, from about 45 cm high to grain fill [see diagram below]. To supply the crop requirements, it is best to apply at 4 stages and to check nutrient adequacy with plant tissue tests.



# General discussion on selection of maize vareties for silage

Good maize silage is an integral component of many livestock production systems in South Africa, including feedlots and dairies. The energy value of silage depends on the amount of grain it contains. The best grain-producing hybrids in a particular area are usually the best adapted to local growing conditions and are therefore also likely to be the best silage-producing hybrids.
The following aspects should be taken into consideration when selecting a hybrid:
Adaptability; Disease pressure; Targeted date for cutting; whether a Contractor will be hired to harvest the crop; as well as Yield and desired Quality. Each of these factors affects the ultimate yield and the quality of the silage obtained.
Medium season hybrids should make up the bulk of silage plantings, due to their consistent and reliable yield performance. Depending on heat units, medium season hybrids are ready for cutting after approximately 105 to 150 days. This growth class generally offers good disease resistance and an extended cutting window of 10 to 20 days. A plant population 20 to 40% higher than normal is recommended for silage production.

The following formulas may be used to calculate the approximate amount of silage that could be harvested per cutting per hectare. The formulas provide a reasonably good indication of the amount (Crafford&Nott).

a.

$$\frac{(\text{Rainfall (mm)} \times \text{Soil depth (cm)}) \times 1{,}09}{(88{,}90 \times 15{,}24)} = \text{Wet silage yield in t/ha}$$

b.

(Grain yield x 1,14) + 1,97 = DM silage yield in t/ha

c.

DM ÷ 0,3 = Wet silage

Producing silage involves exactly the same input costs as maize for grain production. Silage production requires a higher plant population than grain production.

The objective is to make silage as cost effectively as possible. Like any intensive grazing system, it is only recommended for high-producing animals. For best results, use the best lands for silage production, in order to keep to a minimum the area required to meet the silage needs. Wastage may be as much as 15% and must be brought into consideration when calculating the amount of silage that will be required to meet the animals' roughage needs. Supplementation systems encompass energy- and/or protein-rich licks or supplementary feeding.

Here is simple way is to calculate the feed needs in terms of livestock units per month.

**Approximate feed requirements of livestock unit per month (LSU/M):**

**Sheep**:
A fully-grown sheep requires 4,5 kg wet silage (1,5 kg dry material) per day.
A large sheep needs 1,7 kg of dry silage per day, meaning 0,62 tons of dry silage per year.

**Cattle**:
A fully-grown cow requires 30 kg of wet silage (10 kg dry material) per day. Fully-grown cow needs 3,65 to 4,7 tonnes of dry silage per year, depending on its frame size. High quality silage fed ad-lib may make animals over-fat.

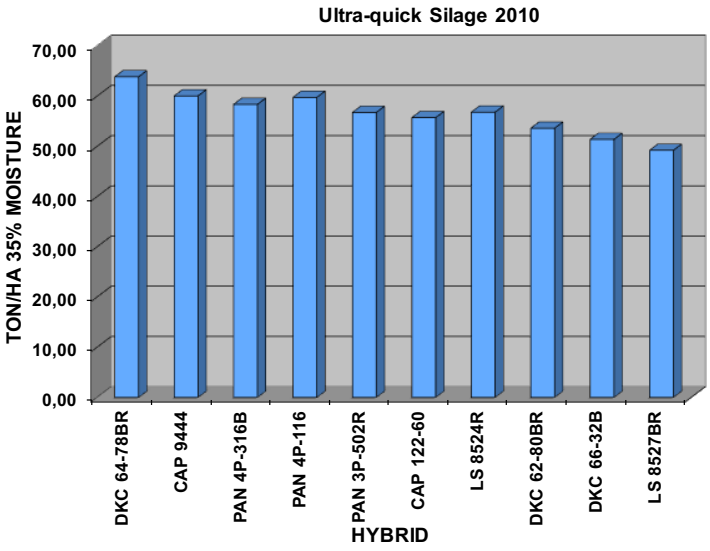
## What is the optimum cutting period?

The optimum cutting period is a main consideration for silage making. Continuous monitoring of the moisture content or maturity of the maize is necessary from about four weeks after pollination. Moisture content at harvest should be between 65 and 70%.

Although there are sophisticated procedures available to determine the moisture content of maize, the milk line of the kernel provides a good indication of the maturity of the maize plants. The milk line is the border where the fluid and solid portions of the kernel meet.
To monitor the development of the milk line, break a cob in half. When the milk line is half to two-thirds of the way from the crown of the kernel, the maize is usually ready for cutting and ensiling. For good quality silage, it is advisable to complete the harvest before the moisture content of the maize falls below 63%.

The cutting period can be extended by spacing plantings five to seven days apart or by planting a package of different growth classes.

Moisture content will be about 65% at 50% milk line – this is the ideal time to cut your silage Grain moisture will be around 37%. It is advisable to start cutting your silage at 40% milk line and to end off at 60% milk line. That means that the bulk of your silage will be at 50% milk line when you cut it. Best practice is to use a microwave oven test to determine the moisture content .




### 2015 Kokstad silage trials

| Cultivar | Plant population (number/ha) | Dry matter (%) | Dry matter yield |
|---|---|---|---|
| CAP 122-60 | 66 667 | 55.90 | 22 417 |
| CAP 90-01 | 64 444 | 48.72 | 18 372 |
| CAP 90-04 | 66 667 | 47.67 | 25 312 |
| CAP 90-21 | 66 111 | 47.75 | 24 474 |
| **Mean** | **65 833** | **55.41** | **22 833** |
| LSD (P≤ 0.05) | 3 211.2 | 6.9 | 4 965 |
| CV (%) | 3.0 | 7.6 | 13.2 |

# YELLOW HYBRID MAIZE TABLE

| Cultivar | General characteristics | | | | | | | Disease tolera | |
|---|---|---|---|---|---|---|---|---|---|
| | Days to 50% tassel | Days to physiological maturity | Growth season | Tillering | Prolificacy | Drydown period | Standability | Cobrot | |
| **CAP 122-60** | 65 - 80 | 120 - 130 | Medium | 2 | 1 | Medium | 1 | 2 | |
| **CAP 9444 NG** | 65 - 80 | 120 - 135 | Medium | 5 | 1 | Medium | 1 | 2 | |
| **CAP 95-22** | 75 - 85 | 130 - 140 | Medium - Late | 2 | 2 | Medium - Late | 1 | 2 | |
| **CAP 90-06Q** | 65 - 80 | 120 - 134 | Medium | 5 | 3 | Medium | 2 | 2 | |
| **CAP 96-46** | 75 - 85 | 130 - 135 | Medium | 3 | 2 | Medium | 1 | 2 | |
| Key. 1: Excellent - 5: Poor | | | | | | | | | |

NOTES:

1 - Western Regions
2 - Temperate Eastern Regions
3 - Cold Eastern Region
4 - KwaZulu Natal Region
5 - Warm Irrigation Region

| ance | | | | | Plant population by region - refer to map of production areas (per 1000 pph) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Northern leaf blight | Brown rust | Maize streak virus | Gray leaf spot | Region 1 West | Region 2 Temperate East | Region 3 Cold East | Region 4 KZN | Region 5 Irrigation |
| | 3 | 3 | 3 | 3 | 30 - 40 | 50 - 60 | 50 - 60 | 50 - 60 | 70 -100 |
| | 2 | 1 | 1 | 3 | 18 - 30 | 30 - 40 | 30 - 4 0 | 30 - 40 | 50 - 60 |
| | 2 | 2 | 2 | 2 | 30 - 40 | 50 - 60 | 50 - 60 | 50 - 60 | 70 -100 |
| | 2 | 2 | 1 | 1 | 18 - 30 | 40 - 50 | 30 - 40 | 30 - 40 | 50 - 60 |
| | 2 | 2 | 1 | 2 | 18 - 30 | 40 - 50 | 30 - 40 | 30 - 40 | 50 - 60 |

# WHITE HYBRID MAIZE TABLE

| Cultivar | General characteristics | | | | | | | Disease tolerance | |
|---|---|---|---|---|---|---|---|---|---|
| | Days to 50% tassel | Days to physiological maturity | Growth season | Tillering | Prolificacy | Drydown period | Standability | Cob rot | |
| **CAP 90-21** | 78 - 80 | 120 - 135 | Medium - Late | 2 | 3 | Medium - Late | 2 | 2 | |
| **CAP 96-19** | 65 - 80 | 120 - 130 | Medium | 2 | 2 | Medium | 2 | 2 | |
| **CAP 90-01** | 69 - 75 | 135 - 145 | Medium | 2 | 2 | Medium | 3 | 2 | |
| **CAP 95-03** | 75 - 85 | 130 - 140 | Medium - Late | 2 | 3 | Medium - Late | 2 | 2 | |
| **CAP 97-45** | 70 - 85 | 125 - 130 | Medium | 3 | 2 | Medium | 2 | 2 | |
| **CAP 341NG** | 65 - 75 | 125 - 134 | Medium | 5 | 3 | Medium | 2 | 3 | |
| Key. 1: Excellent - 5: Poor | | | | | | | | | |

NOTES:

1 - Western Regions
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|---|---|---|---|---|---|---|---|---|---|
| | Northern leaf blight | Brown rust | Maize streak virus | Gray leaf spot | Region 1 West | Region 2 Temperate East | Region 3 Cold East | Region 4 KZN | Region 5 Irrigation |
| | 2 | 1 | 1 | 2 | 18-30 | 30-40 | 30-40 | 30-40 | 50 - 60 |
| | 2 | 2 | 2 | 2 | 18 - 30 | 45 - 55 | 30 - 40 | 40 - 50 | 50 - 60 |
| | 3 | 2 | 1 | 2 | 18-30 | 30-40 | 30-40 | 30-40 | 50-60 |
| | 2 | 2 | 2 | 2 | 18 - 30 | 45 - 55 | 30 - 40 | 40 - 50 | 50 - 60 |
| | 2 | 2 | 2 | 2 | 18 - 30 | 45 - 55 | 30 - 40 | 40 - 50 | 50 - 60 |
| | 3 | 3 | 1 | 1 | 18-30 | 30-40 | 30-40 | 30-40 | 50-60 |

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