

Rainy Season Cultivars and Hybrid Parents

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Abstract This chapter entitled “Rainy season cultivars and hybrid parents” gives a focussed description of improved sweet sorghum varieties/restorers, hybrids and female hybrid parents (as per PPVFRA). The coloured picture of the line is provided for easy identification. The genetic variability for all the metric traits is conspicuous and for some of the qualitative traits like anthocyanin coloration, glume color differences between the lines are not quite revealing. Among the biochemical traits such as sucrose, glucose and fructose the differences are significant among the cultivars.

Keywords Cultivars · Hybrids · Pedigree · Rainy · Kharif · Quantitative Traits · Brix%, stalk yield, sugar yield, grain yield · Glucose · Fructose · Sucrose

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1 ICSV 700 Salient Features



1. Pedigree: (IS 1082 × SC 108-3)-1-1-1-1-1.
2. Days to 50 % flowering: 84 days.
3. Plant height (m): 3.4
4. Plant girth (mm): 17.6
5. Biomass yield (t ha^{-1}): 45.6
6. Juice yield (t ha^{-1}): 17.4
7. Juice extraction (%): 38
8. Brix (%): 16
9. Sugar yield (t ha^{-1}): 2.1
10. Grain yield (t ha^{-1}): 3.1
11. Male fertility restoration (%): 85
12. Sucrose (%): 7.9
13. Glucose (%): 0.7
14. Fructose (%): 0.2
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}).
* Milli siemens per meter: 8.4
17. Tolerance to: Stem borer, Shootfly, Rust.
18. Adaptation: Rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks measured value etc. |
|---|---|---|---|---|---|---|---|---|---|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | √ | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | √ | | | | | | | | | Green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | 84 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | | √ | 3.1 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | | | | | | | | | √ | Strong |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | | | | | √ | | | | | Medium |
| Stigma length (mm) | | | | | | | | | √ | Long |
| Flower with pedicel: length of flower | | | | | | √ | | | | Medium |
| Anther: length | | | | | | √ | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | Orange |
| Glume: color | | | | √ | | | | | | Light red |
| Plant: total height | | | | | | | | | √ | 3.4 |
| Stem: diameter (at lower one-third height of plant) (mm) | | √ | | | | | | | | 17.6 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | √ | | | 71.6 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | 8.1 |
| Panicle: length without peduncle | | | √ | | | | | | | 18.6 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | 6.1 |
| Panicle: density at maturity (ear head compactness) | | | | | | | √ | | | Semi compact |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | √ | | | | | | | | | 3.8 |
| Glume coverage (%) | | | √ | | | | | | | 50 |
| Threshability | | | | | √ | | | | | Partly threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | 28.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | √ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | √ | | | 25 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | Yellow |
| Grain: lustre | | | | | | | √ | | | Lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

2 ICSV 25272 Salient Features



1. Pedigree: (DSV 4 × SSV 84)-2-2-1-2
2. Days to 50 % flowering: 74 days.
3. Plant height (cm): 3.1
4. Plant girth (mm): 14.5
5. Biomass yield (t ha^{-1}): 55.6
6. Juice yield (t ha^{-1}): 26.3
7. Juice extraction (%): 47
8. Brix (%) 17
9. Sugar yield (t ha^{-1}): 3.2
10. Grain yield (t ha^{-1}): 3.4
11. Male fertility restoration (%): 80
12. Sucrose (%): 6.4
13. Glucose (%): 1.8
14. Fructose (%): 1.1
15. pH of Juice: 5.0
16. Electrical conductivity of Juice (mS m^{-1}) * Milli siemens per meter: 9.5
17. Tolerance to: Aphids.
18. Adaptation: Rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks measured value etc. |
|---|---|---|---|---|---|---|---|---|---|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | √ | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | | √ | | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | √ | | | | | 74 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | √ | | 3 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | Absent |
| Stigma length (mm) | | | | | | | | | √ | Long |
| Flower with pedicel: length of flower | | | | | √ | | | | | Medium |
| Anther: length | | | | | | | | √ | | Long |
| Anther: colour of dry anther | | | | √ | | | | | | Orange |
| Glume: color | | | | √ | | | | | | Light red |
| Plant: total height | | | | | | | | | √ | 3.3 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | √ | | | | | | | 14.5 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 75.1 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 6.7 |
| Panicle: length without peduncle | | | | | √ | | | | | 22.9 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | 7.8 |
| Panicle: density at maturity (ear head compactness) | | | | | √ | | | | | Semi Loose |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | √ | | | | | 14.7 |
| Glume coverage (%) | | | √ | | | | | | | 50 |
| Threshability | | | | | √ | | | | | Partly threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | 33 |
| Grain: shape in dorsal view | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | √ | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | | √ | | 25 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | Yellow |
| Grain: lustre | | | | | √ | | | | | Medium |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

3 ICSV 25274 Salient Features



1. Pedigree: (DSV 4 × SSV 84)-2-5-1-3
2. Days to 50 % flowering: 87 days
3. Plant height (m): 3.5
4. Plant girth (mm): 20.45
5. Biomass yield (t ha⁻¹): 49.1
6. Juice yield (t ha⁻¹): 19.6
7. Juice extraction (%): 40
8. Brix (%): 20
9. Sugar yield (t ha⁻¹): 2.9
10. Grain yield (t ha⁻¹): 2.6
11. Male fertility restoration (%): 85
12. Sucrose (%): 9.6
13. Glucose (%): 2.0
14. Fructose (%): 0.4
15. pH of Juice: 5.0
16. Electrical conductivity of Juice (mS m⁻¹) * milli siemens per meter: 8.1
17. Tolerance to: Aphids, moderately resistant to Shoot fly and Grain mold.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks measured value etc. | |
|---|---|---|---|---|---|---|---|---|---|-----------------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptiles | | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | √ | | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | | | √ | | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | √ | | | | | | | | 87 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | √ | | | 3.0 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | | Absent |
| Lemma: arista formation (awns) | √ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | | Absent |
| Stigma length (mm) | | | | | | √ | | | | | Medium |
| Flower with pedicel: length of flower | | | | | | √ | | | | | Medium |
| Anther: length | | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | | Orange |
| Glume: color | | | | | | | | √ | | | Purple |
| Plant: total height | | | | | | | | | √ | | 3.5 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | √ | | | | | | | | 19.7 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | | 88.7 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | | 9.8 |
| Panicle: length without peduncle | | | | | | √ | | | | | 21.3 |
| Panicle: length of branches (middle third of panicle) | | | | | | √ | | | | | 8.1 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | √ | | | Semi compact |
| Panicle: shape | | | √ | | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | √ | | | | | | | | 8.3 |
| Glume coverage (%) | √ | | | | | | | | | | 25 |
| Threshability | √ | | | | | | | | | | Freely threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | | | | | √ | | 49.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | √ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | √ | | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | | Yellow |
| Grain: luster | | | | | | | | √ | | | Lustrous |

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4 ICSV 25275 Salient Features



1. Pedigree: (IS 19587 × B 24)-2-1-1-1
2. Days to 50 % flowering: 81 days
3. Plant height (m): 3.3
4. Plant girth (mm): 15.2
5. Biomass yield (t ha^{-1}): 46.6
6. Juice yield (t ha^{-1}): 11.8
7. Juice extraction (%): 23.5
8. Brix (%): 16
9. Sugar yield (t ha^{-1}): 2.8
10. Grain yield (t ha^{-1}): 2.7
11. Male fertility restoration (%): 85
12. Sucrose (%): 7.7
13. Glucose (%): 1.7
14. Fructose (%): 0.4
15. pH of Juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter: 7.7
17. Tolerance to: Shootfly, Aphids, Rust.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks measured value etc. |
|---|---|---|---|---|---|---|---|---|---|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | | | √ | | | | | | | Purple |
| Leaf: midrib colour (5th fully developed leaf) | | | | √ | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | 81 days |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | √ | | 2.8 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemma: arista formation (awns) | | | | | | | | | √ | Strong |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | Absent |
| Stigma length (mm) | | | | | | √ | | | | Medium |
| Flower with pedicel: length of flower | | | | | | √ | | | | Medium |
| Anther: length | | | | | | √ | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | Dark orange |
| Glume: color | | | | | | √ | | | | Red |
| Plant: total height | | | | | | | | | | |
| Stem: diameter (at lower one-third height of plant) (mm) | | | √ | | | | | | | 15.2 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | √ | | | 72.7 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | √ | | | 7.9 |
| Panicle: length without peduncle | | | √ | | | | | | | 17.1 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | 5.4 |
| Panicle: density at maturity (ear head compactness) | | | | | | | √ | | | Semi compact |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | √ | | | | | | | 6.7 |
| Glume coverage (%) | | | √ | | | | | | | 50 |
| Threshability | √ | | | | | | | | | Partly threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | 30.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | √ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | √ | | | 25 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | Yellow |
| Grain: lustre | | | | | √ | | | | | Medium |

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5 ICSV 25280 Salient Features



1. Pedigree: (ICSV 93046 × SSV 84)-7-2-1-3
2. Days to 50 % flowering: 83 days
3. Plant height (m): 3.3
4. Plant girth (mm): 15.1
5. Biomass yield (t ha^{-1}): 45.4
6. Juice yield (t ha^{-1}): 24.4
7. Juice extraction (%): 54
8. Brix (%): 19
9. Sugar yield (t ha^{-1}): 3.1
10. Grain yield (t ha^{-1}): 2.4
11. Male fertility restoration (%): 90
12. Sucrose (%): 8.9
13. Glucose (%): 1.9
14. Fructose (%): 0.4
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter: 7.6
17. Tolerance to: Aphids, Shootfly, Stem borer.
18. Adaptation: Rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks measured value etc. |
|---|---|---|---|---|---|---|---|---|---|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | | | √ | | | | | | | Purple |
| Leaf: midrib colour (5th fully developed leaf) | √ | | | | | | | | | Green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | 83 days |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | √ | | 2.7 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemma: arista formation (awns) | | | | | | | | | √ | Strong |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | | | | | | √ | | | | Medium |
| Stigma length (mm) | | | | | | √ | | | | Medium |
| Flower with pedicel: length of flower | | | | | | √ | | | | Medium |
| Anther: length | | | | | | √ | | | | Medium |
| Anther: colour of dry anther | | | | | √ | | | | | Dark orange |
| Glume: color | | | | | | | | √ | | Purple |
| Plant: total height | | | | | | | | √ | | 3.3 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | √ | | | | | | | 15.1 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 72.4 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | 8.5 |
| Panicle: length without peduncle | | | √ | | | | | | | 16.8 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | 6.1 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | √ | | Semi compact |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | √ | | | | | | | 6.5 |
| Glume coverage (%) | | | √ | | | | | | | 50 |
| Threshability | | | | | √ | | | | | Partly threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | 34.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | √ | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | √ | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | Yellow |
| Grain: lustre | | | | | | | | √ | | Lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

6 ICSV 93046 Salient Features



1. Pedigree: [(IS 1082 × SC 108 -3)-1-1-1-1-1) × (((IS 5622 × CS 3541)-20-1-1-1-1-1-1 × (UChV2 × Bulk Y-55)-1-5-1)]-9-3-1-1-1
2. Days to 50 % flowering: 86 days
3. Plant height (m): 3.6
4. Plant girth (mm): 17.9
5. Biomass yield (t ha⁻¹): 54.0
6. Juice yield (t ha⁻¹): 25.6
7. Juice extraction (%): 47
8. Brix (%): 19
9. Sugar yield (t ha⁻¹): 3.1
10. Grain yield (t ha⁻¹): 2.7
11. Male fertility restoration (%): 90
12. Sucrose (%): 9.0
13. Glucose (%): 1.6
14. Fructose (%): 0.2
15. pH of Juice: 5.0
16. Electrical conductivity of juice (mS m⁻¹) * Milli siemens per meter: 8.9
17. Tolerance to: Shootfly, Anthracnose, Grain mold and Downy mildew.
18. Adaptation: Rainy season/Post rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks Measured value etc. |
|---|---|---|---|---|---|---|---|---|---|-----------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | ✓ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | ✓ | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | | ✓ | | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | | ✓ | | 86 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | ✓ | | 3.3 |
| Flag leaf: yellow colouration of midrib | ✓ | | | | | | | | | Absent |
| Lemma: arista formation (awns) | | | | | ✓ | | | | | Medium |
| Stigma: anthocyanin coloration | ✓ | | | | | | | | | Absent |
| Stigma: yellow coloration | ✓ | | | | | | | | | Absent |
| Stigma length (mm) | | | | | | ✓ | | | | Medium |
| Flower with pedicel: length of flower | | | | | | ✓ | | | | Medium |
| Anther: length | | | | | | ✓ | | | | Medium |
| Anther: colour of dry anther | | | | ✓ | | | | | | Orange |
| Glume: color | | | | | ✓ | | | | | Red |
| Plant: total height | | | | | | | | ✓ | | 3.6 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | ✓ | | | | | | | 17.9 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | ✓ | | 72.8 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | ✓ | | 8.4 |
| Panicle: length without peduncle | | | ✓ | | | | | | | 18.1 |
| Panicle: length of branches (middle third of panicle) | | | | | ✓ | | | | | 7.3 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | ✓ | | Semi compact |
| Panicle: shape | | | ✓ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | ✓ | | | | | | | 5.3 |
| Glume coverage (%) | | | ✓ | | | | | | | 50 |
| Threshability | ✓ | | | | | | | | | Freely threshable |
| Caryopsis: colour after threshing | ✓ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | ✓ | | | | | 27.0 |
| Grain: shape in dorsal view | | | ✓ | | | | | | | Circular |
| Grain: shape in profile view | | | ✓ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | ✓ | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | | ✓ | | 25 % corneous |
| Grain: colour of vitreous albumen | | | ✓ | | | | | | | Yellow |
| Grain: luster | | | | | | | | ✓ | | Lustrous |

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7 SPV 422 Salient Features



1. Pedigree: Good grain 1485 (ICSV 574/ICSR 165)
2. Days to 50 % flowering: 86 days.
3. Plant height (m): 3.1
4. Plant girth (mm): 21.6
5. Biomass yield (t ha^{-1}): 47.6
6. Juice yield (t ha^{-1}): 18.7
7. Juice extraction (%): 39
8. Brix (%): 20
9. Sugar yield (t ha^{-1}): 2.8
10. Grain yield (t ha^{-1}): 3.1
11. Male fertility restoration (%): 85
12. Sucrose (%): 9.6
13. Glucose (%): 2.6
14. Fructose (%): 0.2
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1})* milli siemens per meter: 8.8
17. Tolerance to: Anthracnose, Leaf blight.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks Measured value etc. | |
|---|---|---|---|---|---|---|---|---|---|-----------------------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | | | ✓ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | ✓ | | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | ✓ | | | | | | | | | | Green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | | ✓ | | | 86 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | ✓ | | | 2.6 |
| Flag leaf: yellow colouration of midrib | ✓ | | | | | | | | | | Absent |
| Lemna: arista formation (awns) | ✓ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | ✓ | | | | | | | | | | Absent |
| Stigma: yellow coloration | ✓ | | | | | | | | | | Absent |
| Stigma length (mm) | | | | ✓ | | | | | | | Short |
| Flower with pedicel: length of flower | | | | | | ✓ | | | | | Medium |
| Anther: length | | | | | | ✓ | | | | | Medium |
| Anther: colour of dry anther | | | | | ✓ | | | | | | Orange |
| Glume: color | | | | | | | | ✓ | | | Purple |
| Plant: total height | | | | | | | | | ✓ | | 3.1 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | ✓ | | | | | 21.6 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | ✓ | | 85.2 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | ✓ | | 7.4 |
| Panicle: length without peduncle | | | | ✓ | | | | | | | 16.8 |
| Panicle: length of branches (middle third of panicle) | | | | | | ✓ | | | | | 6.2 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | ✓ | | | Semi compact |
| Panicle: shape | | | | ✓ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | ✓ | | | | | | | | | | 4.3 |
| Glume coverage (%) | ✓ | | | | | | | | | | 25 |
| Threshability | | | | | | ✓ | | | | | Partly threshable |
| Caryopsis: colour after threshing | ✓ | | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | | | | | ✓ | | 35.0 |
| Grain: shape in dorsal view | | | | ✓ | | | | | | | Circular |
| Grain: shape in profile view | | | | ✓ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | | ✓ | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | ✓ | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | | ✓ | | | | | | | Yellow |
| Grain: lustre | | | | | | | | | ✓ | | Lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

8 SSV 74 Salient Features



1. Pedigree: Selection from PAB 74 (Sudan; Bred by UAS, Dharwad)
2. Days to 50 % flowering: 84 days
3. Plant height (m): 3.3
4. Plant girth (mm): 20.66
5. Biomass yield (t ha^{-1}): 41.5
6. Juice yield (t ha^{-1}): 14.9
7. Juice extraction (%): 36
8. Brix (%): 16
9. Sugar yield (t ha^{-1}): 1.8
10. Grain yield (t ha^{-1}): 1.5
11. Male fertility restoration (%): 90
12. Sucrose (%): 7.0
13. Glucose (%): 1.5
14. Fructose (%): 0.3
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter: 7.8
17. Tolerance to: Aphids, Rust.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks measured value etc. | |
|---|---|---|---|---|---|---|---|---|---|-----------------------------|-------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | ✓ | | | | | | | | | | Grayed purple |
| Leaf sheath: anthocyanin colouration | ✓ | | | | | | | | | | Grayed purple |
| Leaf: midrib colour (5th fully developed leaf) | | | ✓ | | | | | | | | Yellow green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | ✓ | | | | 84 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | | ✓ | | 3.0 |
| Flag leaf: yellow colouration of midrib | | | | | | | | ✓ | | | Absent |
| Lemna: arista formation (awns) | ✓ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | ✓ | | | | | | | | | | Present |
| Stigma: yellow coloration | ✓ | | | | | | | | | | Absent |
| Stigma length (mm) | | | ✓ | | | | | | | | Short |
| Flower with pedicel: length of flower | | | | | | ✓ | | | | | Long |
| Anther: length | | | | | | ✓ | | | | | Short |
| Anther: colour of dry anther | | | | | ✓ | | | | | | Orange |
| Glume: color | | | | | | ✓ | | | | | Grayed purple |
| Plant: total height | | | | | | | | | ✓ | | 3.3 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | ✓ | | | | | | | | 18.2 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | ✓ | | | Medium |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | ✓ | | Very broad |
| Panicle: length without peduncle | | | | | | ✓ | | | | | Medium |
| Panicle: length of branches (middle third of panicle) | | | | | | ✓ | | | | | Medium |
| Panicle: density at maturity (ear head compactness) | | | | | | ✓ | | | | | Semi loose |
| Panicle: shape | | | | | | ✓ | | | | | Panicle Broader at Upper part |
| Neck of panicle: visible length above sheath (cm) | | | ✓ | | | | | | | | Very short |
| Glume coverage (%) | | | ✓ | | | | | | | | Short |
| Threshability | | | | | | ✓ | | | | | Partly threshable |
| Caryopsis: colour after threshing | ✓ | | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | | | | ✓ | | | 36.0 |
| Grain: shape in dorsal view | | | | ✓ | | | | | | | Elliptic |
| Grain: shape in profile view | | | | ✓ | | | | | | | Elliptic |
| Grain: size of mark of germ | | | | | | | | ✓ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | | ✓ | | | 25 % corneous |
| Grain: colour of vitreous albumen | | | ✓ | | | | | | | | Grayed yellow |
| Grain: lustre | | | | | | | | | ✓ | | Non lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

9 SSV 84 Salient Features



1. Pedigree: Selection from IS 23568 (Bred by MPKV, Rahuri)
2. Days to 50 % flowering: 87 days
3. Plant height (m): 3.2
4. Plant girth (mm): 18.3
5. Biomass yield (t ha^{-1}): 38.7
6. Juice yield (t ha^{-1}): 13.5
7. Juice extraction (%): 35
8. Brix (%): 19
9. Sugar yield (t ha^{-1}): 1.9
10. Grain yield (t ha^{-1}): 3.3
11. Male fertility restoration (%): 90
12. Sucrose (%): 8.8
13. Glucose (%): 1.7
14. Fructose (%): 0.4
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter:: 7.1
17. Tolerance to: Shootfly, Aphids, Rust.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks Measured value etc. |
|---|---|---|---|---|---|---|---|---|---|--------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | ✓ | | | | | | | | | Yellow green |
| Leaf sheath: anthocyanin colouration | ✓ | | | | | | | | | Yellow green |
| Leaf: midrib colour (5th fully developed leaf) | | | ✓ | | | | | | | Yellow green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | | ✓ | | 87 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | ✓ | | 2.9 |
| Flag leaf: yellow colouration of midrib | ✓ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | ✓ | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | ✓ | | | | | | | | | Present |
| Stigma: yellow coloration | ✓ | | | | | | | | | Present |
| Stigma length (mm) | | | ✓ | | | | | | | Medium |
| Flower with pedicel: length of flower | | | | | | ✓ | | | | Long |
| Anther: length | | | | | | ✓ | | | | Short |
| Anther: colour of dry anther | | | | ✓ | | | | | | Grayed orange |
| Glume: color | | | | | | | | ✓ | | Grayed purple |
| Plant: total height | | | | | | | | ✓ | | 3.2 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | ✓ | | | | | | | 18.3 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | ✓ | | Long |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | ✓ | | Very broad |
| Panicle: length without peduncle | | | ✓ | | | | | | | Short |
| Panicle: length of branches (middle third of panicle) | | | | | ✓ | | | | | Medium |
| Panicle: density at maturity (ear head compactness) | | | | | | | | ✓ | | Semi compact |
| Panicle: shape | | | ✓ | | | | | | | Panicle Braoder at Upper part |
| Neck of panicle: visible length above sheath (cm) | ✓ | | | | | | | | | Absent |
| Glume coverage (%) | | | ✓ | | | | | | | Short |
| Threshability | | | | | ✓ | | | | | Partly threshable |
| Caryopsis: colour after threshing | ✓ | | | | | | | | | Yellow White |
| Grain: weight of 1000 grains (g) | | | | | ✓ | | | | | 25.0 |
| Grain: shape in dorsal view | | | ✓ | | | | | | | Circular |
| Grain: shape in profile view | | | ✓ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | ✓ | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | | ✓ | | 25 % corneous |
| Grain: colour of vitreous albumen | | | ✓ | | | | | | | Grayed yellow |
| Grain: lustre | | | | | | | | ✓ | | Non lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

10 RSSV 9 (CSV 19SS) Salient Features



1. Pedigree: (RSSV 2 X SPV 462)-2-1-1 (Bred by MPKV, Rahuri)
2. Days to 50 % flowering: 85 days
3. Plant height (m): 3.3
4. Plant girth (mm): 17.8
5. Biomass yield ($t\ ha^{-1}$): 58.9
6. Juice yield ($t\ ha^{-1}$): 21.4
7. Juice extraction (%): 36
8. Brix (%): 16
9. Sugar yield ($t\ ha^{-1}$): 2.6
10. Grain yield ($t\ ha^{-1}$): 1.5
11. Male fertility restoration (%): 90
12. Sucrose (%): 9.0
13. Glucose (%): 1.7
14. Fructose (%): 2.8
15. pH of Juice: 4.0
16. Electrical conductivity of juice ($mS\ m^{-1}$) * milli siemens per meter: 9.4
17. Tolerance to: Aphids, Shootfly.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate variety | | | | | | | | | Remarks measured value etc. | |
|---|---|---|---|---|---|---|---|---|---|-----------------------------|-------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | | ✓ | | | | | | | | | Grayed purple |
| Leaf sheath: anthocyanin colouration | ✓ | | | | | | | | | | Grayed purple |
| Leaf: midrib colour (5th fully developed leaf) | ✓ | | | | | | | | | | Yellow green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | ✓ | | | | 85 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | | | ✓ | 2.9 |
| Flag leaf: yellow colouration of midrib | ✓ | | | | | | | | | | Absent |
| Lemna: arista formation (awns) | | | | | | | | | | ✓ | Present |
| Stigma: anthocyanin coloration | ✓ | | | | | | | | | | Present |
| Stigma: yellow coloration | | | | | | ✓ | | | | | Present |
| Stigma length (mm) | | | | | | | | | | ✓ | Long |
| Flower with pedicel: length of flower | | | | | | | ✓ | | | | Long |
| Anther: length | | | | | | | ✓ | | | | Medium |
| Anther: colour of dry anther | | | | | | ✓ | | | | | Grayed orange |
| Glume: color | | | | | | | | | ✓ | | Grayed purple |
| Plant: total height | | | | | | | | | | ✓ | 3.3 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | ✓ | | | | | | | | 17.8 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | ✓ | | Medium |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | | ✓ | Broad |
| Panicle: length without peduncle | | | | ✓ | | | | | | | Short |
| Panicle: length of branches (middle third of panicle) | | | | | | ✓ | | | | | Medium |
| Panicle: density at maturity (ear head compactness) | | | | | | | | | ✓ | | Semi compact |
| Panicle: shape | | | | ✓ | | | | | | | Panicle broader in lower part |
| Neck of panicle: visible length above sheath (cm) | ✓ | | | | | | | | | | Absent or Very short |
| Glume coverage (%) | | | | ✓ | | | | | | | Medium |
| Threshability | | | | | | | ✓ | | | | Difficult threshable |
| Caryopsis: colour after threshing | | | | | | ✓ | | | | | Yellow white |
| Grain: weight of 1000 grains (g) | | | | | | | ✓ | | | | 26.0 |
| Grain: shape in dorsal view | | | | ✓ | | | | | | | Circular |
| Grain: shape in profile view | | | | ✓ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | ✓ | | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | ✓ | | | | 50 % corneous |
| Grain: colour of vitreous albumen | | | | ✓ | | | | | | | Grayed yellow |
| Grain: lustre | | | | | | | | | ✓ | | Non lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

11 ICSB 38 Salient Features



1. Pedigree: [(BTx 623 × MR 862)B lines bulk]-5-1-3-5
2. Days to 50 % flowering: 74 days
3. Plant height (m): 1.4
4. Plant girth (mm): 17.7
5. Biomass yield (t ha^{-1}): 16.0
6. Juice yield (t ha^{-1}): 4.4
7. Juice extraction (%): 27.5
8. Brix (%): 9
9. Sugar yield (t ha^{-1}): 0.3
10. Grain yield (t ha^{-1}): 2.3
11. Male fertility restoration (%): 80
12. Sucrose (%): 4.7
13. Glucose (%): 2.1
14. Fructose (%): 0.7
15. pH of juice: 5.5
16. Electrical conductivity of juice (mS m^{-1}) * Milli siemens per meter: 14.7
17. Tolerance to: Shoot fly, Stem borer, Rust.
18. Adaptation: Rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid parent | | | | | | | | | Remarks measured value etc. | |
|---|---|---|---|---|---|---|---|---|---|-----------------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | ✓ | | | | | | | | | | Green |
| Leaf sheath: anthocyanin colouration | ✓ | | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | | | ✓ | | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | ✓ | | | | 74 |
| Plant: natural height of foliage up to base of flag leaf | | | | ✓ | | | | | | | 1.1 |
| Flag leaf: yellow colouration of midrib | ✓ | | | | | | | | | | Absent |
| Lemna: arista formation (awns) | ✓ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | ✓ | | | | | | | | | | Absent |
| Stigma: yellow coloration | ✓ | | | | | | | | | | Average |
| Stigma length (mm) | | | | ✓ | | | | | | | Short |
| Flower with pedicel: length of flower | | | | ✓ | | | | | | | Short |
| Anther: length | | | | ✓ | | | | | | | Short |
| Anther: colour of dry anther | | | | | | | ✓ | | | | Orange |
| Glume: color | | | | | | | ✓ | | | | Light red |
| Plant: total height | | | | ✓ | | | | | | | 1.4 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | ✓ | | | | 17.7 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | ✓ | | 80.6 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | ✓ | | 7.6 |
| Panicle: length without peduncle | | | | | | | ✓ | | | | 30.7 |
| Panicle: length of branches (middle third of panicle) | | | | | | | ✓ | | | | 7.7 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | | ✓ | | Semi compact |
| Panicle: shape | | | | | | | | | ✓ | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | | | | | | ✓ | 24 |
| Glume coverage (%) | ✓ | | | | | | | | | | 25 |
| Threshability | | | | | | | ✓ | | | | Partly threshable |
| Caryopsis: colour after threshing | ✓ | | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | | | ✓ | | | | 26.0 |
| Grain: shape in dorsal view | | | | ✓ | | | | | | | Circular |
| Grain: shape in profile view | | | | ✓ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | | ✓ | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | ✓ | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | | ✓ | | | | | | | Yellow |
| Grain: lustre | ✓ | | | | | | | | | | Non-lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

12 ICSB 474 Salient Features



1. Pedigree: (IS 18432 × ICSB 6)-11-1-1-2-2
2. Days to 50 % flowering: 70 days
3. Plant height (m): 2.1
4. Plant girth (mm): 14.1
5. Biomass yield (t ha^{-1}): 23.1
6. Juice yield (t ha^{-1}): 8.0
7. Juice extraction (%): 34.4
8. Brix (%): 11
9. Sugar yield (t ha^{-1}): 0.6
10. Grain yield (t ha^{-1}): 1.4
11. Male fertility restoration (%): 75
12. Sucrose (%): 5.7
13. Glucose (%): 1.2
14. Fructose (%): 0.7
15. pH of juice: 5.1
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter: 10.2
17. Tolerance to: Stem borer
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid parent | | | | | | | | | Remarks Measured value etc. |
|---|---|---|---|---|---|---|---|---|---|--------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | √ | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | √ | | | | | | | | Green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | 70 |
| Plant: natural height of foliage up to base of flag leaf | | | | | √ | | | | | 1.8 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | | | | | | | | | √ | Strong |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | | | | | √ | | | | | Medium |
| Stigma length (mm) | | | | | √ | | | | | Medium |
| Flower with pedicel: length of flower | | | | | √ | | | | | Medium |
| Anther: length | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | Orange |
| Glume: color | | | | | √ | | | | | Red |
| Plant: total height | | | | | | | √ | | | 2.1 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | √ | | | 14.1 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | √ | | | 73.1 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | √ | | | 7.3 |
| Panicle: length without peduncle | | | | | √ | | | | | 21 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | 6 |
| Panicle: density at maturity (ear head compactness) | | | | | | | √ | | | Semi compact |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | √ | | | | | 11.4 |
| Glume coverage (%) | | | √ | | | | | | | 50 |
| Threshability | √ | | | | | | | | | Partly threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | | | √ | | | 43.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | √ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | √ | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | Yellow |
| Grain: lustre | | | | | √ | | | | | Medium |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

13 ICSB 675 Salient Features



1. Pedigree: (E 36-1 × ICSB 17) -12-2
2. Days to 50 % flowering: 76 days.
3. Plant height (m): 1.2
4. Plant girth (mm): 15.0
5. Biomass yield (t ha^{-1}): 21.4
6. Juice yield (t ha^{-1}): 6.7
7. Juice extraction (%): 31.3
8. Brix (%): 12
9. Sugar yield (t ha^{-1}): 0.6
10. Grain yield (t ha^{-1}): 0.6
11. Male fertility restoration (%): 60
12. Sucrose (%): 1.7
13. Glucose (%): 2.4
14. Fructose (%): 0.7
15. pH of juice: 5.3
16. Electrical conductivity of juice (mS m^{-1}) * Milli siemens per meter: 12.2
17. Tolerance to: Aphids, terminal drought.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid parent | | | | | | | | | Remarks Measured value etc. | |
|---|---|---|---|---|---|---|---|---|---|-----------------------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | | | √ | | | | | | | | Purple |
| Leaf: midrib colour (5th fully developed leaf) | | | | √ | | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | | 76 |
| Plant: natural height of foliage up to base of flag leaf | | | √ | | | | | | | | 1.0 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | | Average |
| Stigma length (mm) | | | √ | | | | | | | | Short |
| Flower with pedicel: length of flower | | | | | | √ | | | | | Medium |
| Anther: length | | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | | Orange |
| Glume: color | | | | | | | | √ | | | Purple |
| Plant: total height | | | √ | | | | | | | | 1.2 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | √ | | | 15.0 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | | 85.3 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | | 8.5 |
| Panicle: length without peduncle | | | | | | √ | | | | | 21 |
| Panicle: length of branches (middle third of panicle) | | | | | | √ | | | | | 7.4 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | √ | | | Semi compact |
| Panicle: shape | | | √ | | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | √ | | | | | | 12.7 |
| Glume coverage (%) | √ | | | | | | | | | | 25 |
| Threshability | √ | | | | | | | | | | Freely threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | √ | | | | | | | 16.0 |
| Grain: shape in dorsal view | | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | √ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | √ | | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | | Yellow |
| Grain: lustre | | | | | | √ | | | | | Medium |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

14 ICSB 702 Salient Features



1. Pedigree: (ICSB 101 × SP 36257)-3-3-1-2
2. Days to 50 % flowering: 67 days.
3. Plant height (m): 1.6
4. Plant girth (mm): 15.0
5. Biomass yield (t ha^{-1}): 17.4
6. Juice yield (t ha^{-1}): 7.6
7. Juice extraction (%): 43.6
8. Brix (%): 13
9. Sugar yield (t ha^{-1}): 0.74
10. Grain yield (t ha^{-1}): 4.1
11. Male fertility restoration (%): 70
12. Sucrose (%): 4.8
13. Glucose (%): 1.0
14. Fructose (%): 0.6
15. pH of juice: 5.3
16. Electrical conductivity of juice (mS m^{-1}) * Milli siemens per meter: 11.5
17. Tolerance to: Aphids.
18. Adaptation: Rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid parent | | | | | | | | | Remarks Measured value etc. | |
|---|---|---|---|---|---|---|---|---|---|-----------------------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | ✓ | | | | | | | | | | Green |
| Leaf sheath: anthocyanin colouration | ✓ | | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | | ✓ | | | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | | | ✓ | | 67 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | ✓ | | | | | 1.4 |
| Flag leaf: yellow colouration of midrib | ✓ | | | | | | | | | | Absent |
| Lemna: arista formation (awns) | ✓ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | ✓ | | | | | | | | | | Absent |
| Stigma: yellow coloration | ✓ | | | | | | | | | | Average |
| Stigma length (mm) | | | | ✓ | | | | | | | Short |
| Flower with pedicel: length of flower | | | | ✓ | | | | | | | Short |
| Anther: length | | | | | | ✓ | | | | | Short |
| Anther: colour of dry anther | | | | | ✓ | | | | | | Orange |
| Glume: color | | | | | ✓ | | | | | | Light red |
| Plant: total height | | | | | | ✓ | | | | | 1.6 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | | ✓ | | 15.0 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | ✓ | | 80.9 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | | ✓ | 7.8 |
| Panicle: length without peduncle | | | | ✓ | | | | | | | 24.1 |
| Panicle: length of branches (middle third of panicle) | | | | | | ✓ | | | | | 7.4 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | | ✓ | | Semi compact |
| Panicle: shape | | | | | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | | | | | | | 15.7 |
| Glume coverage (%) | | | | | | | | | | | 25 |
| Threshability | | | | | | | | | | | Partly threshable |
| Caryopsis: colour after threshing | | | | | ✓ | | | | | | Light yellow |
| Grain: weight of 1000 grains (g) | | | | | ✓ | | | | | | 37.0 |
| Grain: shape in dorsal view | | | | ✓ | | | | | | | Circular |
| Grain: shape in profile view | | | | ✓ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | | ✓ | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | ✓ | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | | ✓ | | | | | | | Yellow |
| Grain: lustre | | | | | | | ✓ | | | | Medium |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

15 ICSB 724 Salient Features



1. Pedigree: ICSP 1B/R MFR-S 7-303-2-1
2. Days to 50 % flowering: 76 days
3. Plant height (m): 1.9
4. Plant girth (mm): 15.0
5. Biomass yield (t ha^{-1}): 24.8
6. Juice yield (t ha^{-1}): 9.7
7. Juice extraction (%): 39.1
8. Brix (%): 13
9. Sugar yield (t ha^{-1}): 0.9
10. Grain yield (t ha^{-1}): 4.3
11. Male fertility restoration (%): 75
12. Sucrose (%): 4.6
13. Glucose (%): 1.4
14. Fructose (%): 0.4
15. pH of juice: 5.3
16. Electrical conductivity of juice (mS m^{-1}) * Milli siemens per meter: 9.7
17. Tolerance to: Aphids
18. Adaptation: Rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid parent | | | | | | | | | Remarks Measured value etc. |
|---|---|---|---|---|---|---|---|---|---|-----------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | √ | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | | | √ | | | | | | Green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | | √ | | 76 |
| Plant: natural height of foliage up to base of flag leaf | | | | | √ | | | | | 1.7 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | Average |
| Stigma length (mm) | | | √ | | | | | | | Short |
| Flower with pedicel: length of flower | | | √ | | | | | | | Short |
| Anther: length | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | √ | √ | | | | | Orange |
| Glume: color | | | | √ | | | | | | Light red |
| Plant: total height | | | | | | | | √ | | 1.9 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | √ | | 15.0 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 78.4 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 9.1 |
| Panicle: length without peduncle | | | | | √ | | | | | 20.7 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | 6.5 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | √ | | Semi compact |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | √ | | | | | 8.2 |
| Glume coverage (%) | √ | | | | | | | | | 25 |
| Threshability | | | | | √ | | | | | Partly threshable |
| Caryopsis: colour after threshing | | | | √ | | | | | | Light yellow |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | 27.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | √ | | | | | Medium |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | | √ | | 25 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | Yellow |
| Grain: lustre | | | | | | | | √ | | Lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

16 ICSB 731 Salient Features



1. Pedigree: ICSV 117 1BF
2. Days to 50 % flowering: 74 days
3. Plant height (m): 2.0
4. Plant girth (mm): 16.4
5. Biomass yield ($t\ ha^{-1}$): 20.3
6. Juice yield ($t\ ha^{-1}$): 9.2
7. Juice extraction (%): 45
8. Brix (%): 14
9. Sugar yield ($t\ ha^{-1}$): 1.0
10. Grain yield ($t\ ha^{-1}$): 3.9
11. Male fertility restoration (%): 70
12. Sucrose (%): 6.9
13. Glucose (%): 2.9
14. Fructose (%): 1.3
15. pH of juice: 5.1
16. Electrical conductivity of Juice ($mS\ m^{-1}$) * Milli siemens per meter: 9.1
17. Tolerance to: Anthracnose.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid parent | | | | | | | | | Remarks Measured value etc. |
|---|---|---|---|---|---|---|---|---|---|-----------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | √ | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | | | √ | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | 74 |
| Plant: natural height of foliage up to base of flag leaf | | | | | √ | | | | | 1.8 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | Average |
| Stigma length (mm) | | | √ | | | | | | | Short |
| Flower with pedicel: length of flower | | | √ | | | | | | | Short |
| Anther: length | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | Orange |
| Glume: color | | | | √ | | | | | | Light red |
| Plant: total height | | | | | | | √ | | | 2.0 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | √ | | | | | | | 16.4 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 88.6 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 8.1 |
| Panicle: length without peduncle | | | | | √ | | | | | 22.1 |
| Panicle: length of branches (middle third of panicle) | | | √ | | | | | | | 6.1 |
| Panicle: density at maturity (ear head compactness) | | | | | | | √ | | | Semi compact |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | √ | | | | | 10.8 |
| Glume coverage (%) | | | √ | | | | | | | 25 |
| Threshability | | | | | √ | | | | | Partly threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | 29.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | √ | | | | | Medium |
| Grain: texture of endosperm (in longitudinal section) | | | √ | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | Yellow |
| Grain: lustre | | | | | √ | | | | | Medium |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

17 ICSSH 28 Salient Features



1. Pedigree: ICSCA 474 × SSV 74
2. Days to 50 % flowering: 76 days
3. Plant height (m): 3.8
4. Plant girth (mm): 17.5
5. Biomass yield (t ha⁻¹): 63.6
6. Juice yield (t ha⁻¹): 28.3
7. Juice extraction (%): 45
8. Brix (%): 16
9. Sugar yield (t ha⁻¹): 3.4
10. Grain yield (t ha⁻¹): 2.4
11. Male fertility restoration (%): 82
12. Sucrose (%): 6.3
13. Glucose (%): 1.5
14. Fructose (%): 0.5
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m⁻¹) * milli siemens per meter: 9.6
17. Tolerance to: Aphids, Shootfly.
18. Adaptation: Rainy season/post rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid | | | | | | | | | Remarks Measured value etc. |
|---|--|---|---|---|---|---|---|---|---|-----------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | √ | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | √ | | | | | | | | | White |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | 76 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | √ | | 3.5 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | | | | | √ | | | | | Medium |
| Stigma length (mm) | | | √ | | | | | | | Short |
| Flower with pedicel: length of flower | | | | | | | | √ | | Long |
| Anther: length | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | Orange |
| Glume: color | | | | | √ | | | | | Red |
| Plant: total height | | | | | | | | √ | | 3.8 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | √ | | 17.5 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 81.1 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 9.8 |
| Panicle: length without peduncle | | | | | | √ | | | | 24.2 |
| Panicle: length of branches (middle third of panicle) | | | | | | √ | | | | 7.9 |
| Panicle: density at maturity (ear head compactness) | | | | | | √ | | | | Semi loose |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | √ | | | | | 11.7 |
| Glume coverage (%) | √ | | | | | | | | | 25 |
| Threshability | √ | | | | | | | | | Freely threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | | | | √ | | 47.0 |
| Grain: shape in dorsal view | | | | √ | | | | | | Circular |
| Grain: shape in profile view | | | | √ | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | √ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | √ | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | | √ | | | | | | Yellow |
| Grain: lustre | √ | | | | | | | | | Non-Lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

18 ICSSH 29 Salient Features



1. Pedigree: ICSA 675 × SSV 74
2. Days to 50 % flowering: 82 days
3. Plant height (m): 3.8
4. Plant girth (mm): 17.8
5. Biomass yield (t ha^{-1}): 58.5
6. Juice yield (t ha^{-1}): 25.4
7. Juice extraction (%): 43
8. Brix (%): 16
9. Sugar yield (t ha^{-1}): 3.6
10. Grain yield (t ha^{-1}): 2.8
11. Male fertility restoration (%): 82
12. Sucrose (%): 7.6
13. Glucose (%): 0.4
14. Fructose (%): 1.5
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter: 7.5
17. Tolerance to: Anthracnose.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid | | | | | | | | | Remarks measured value etc. | |
|---|--|---|---|---|---|---|---|---|---|-----------------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | | | √ | | | | | | | | Purple |
| Leaf: midrib colour (5th fully developed leaf) | | √ | | | | | | | | | Green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | | 82 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | | √ | | 3.5 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | | Absent |
| Stigma length (mm) | | | √ | | | | | | | | Short |
| Flower with pedicel: length of flower | | | | | √ | | | | | | Medium |
| Anther: length | | | | | √ | | | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | | Orange |
| Glume: color | | | | | | | | √ | | | Purple |
| Plant: total height | | | | | | | | √ | | | 3.8 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | √ | | | 17.8 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | | 91.4 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | | 9.9 |
| Panicle: length without peduncle | | | | | √ | | | | | | 25.8 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | | 7.4 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | √ | | | Semi compact |
| Panicle: shape | | | √ | | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | √ | | | | | | | | 9.3 |
| Glume coverage (%) | √ | | | | | | | | | | 25 |
| Threshability | | | | | √ | | | | | | Partly threshable |
| Caryopsis: colour after threshing | | | | √ | | | | | | | Light yellow |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | | 27.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | √ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | √ | | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | | Yellow |
| Grain: lustre | √ | | | | | | | | | | Non-lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

19 ICSSH 30 Salient Features



1. Pedigree: ICSA 724 × SSV 74
2. Days to 50 % flowering: 77 days
3. Plant height (m): 3.5
4. Plant girth (mm): 18.8
5. Biomass yield ($t\ ha^{-1}$): 52.0
6. Juice yield ($t\ ha^{-1}$): 24.5
7. Juice extraction (%): 47
8. Brix (%): 18
9. Sugar yield ($t\ ha^{-1}$): 3.3
10. Grain yield ($t\ ha^{-1}$): 2.2
11. Male fertility restoration (%): 92
12. Sucrose (%): 7.8
13. Glucose (%): 0.6
14. Fructose (%): 2.0
15. pH of juice: 5.0
16. Electrical conductivity of juice ($mS\ m^{-1}$) * Milli siemens per meter: 7.5
17. Tolerance to: Anthracnose, Rust.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid | | | | | | | | | Remarks measured value etc. | |
|---|--|---|---|---|---|---|---|---|---|-----------------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | | ✓ | | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | ✓ | | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | ✓ | | | | | | | | | Green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | ✓ | | | | 77 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | ✓ | | | 3.2 |
| Flag leaf: yellow colouration of midrib | ✓ | | | | | | | | | | Absent |
| Lemna: arista formation (awns) | ✓ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | ✓ | | | | | | | | | | Absent |
| Stigma: yellow coloration | | ✓ | | | | | | | | | Absent |
| Stigma length (mm) | | | ✓ | | | | | | | | Short |
| Flower with pedicel: length of flower | | | ✓ | | | | | | | | Short |
| Anther: length | | | | | ✓ | | | | | | Medium |
| Anther: colour of dry anther | | | | | ✓ | | | | | | Orange |
| Glume: color | | | | | ✓ | | | | | | Red |
| Plant: total height | | | | | | | | ✓ | | | 3.2 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | ✓ | | | 18.8 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | ✓ | | | 83.3 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | ✓ | | | 9.9 |
| Panicle: length without peduncle | | | | | | ✓ | | | | | 23.8 |
| Panicle: length of branches (middle third of panicle) | | | | | | ✓ | | | | | 8 |
| Panicle: density at maturity (ear head compactness) | | | | | | ✓ | | | | | Semi loose |
| Panicle: shape | | | | ✓ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | ✓ | | | | | | | 12.9 |
| Glume coverage (%) | ✓ | | | | | | | | | | 25 |
| Threshability | | | | | | ✓ | | | | | Partly threshable |
| Caryopsis: colour after threshing | | | | | ✓ | | | | | | Light yellow |
| Grain: weight of 1000 grains (g) | | | | | | | | ✓ | | | 44.0 |
| Grain: shape in dorsal view | | | | ✓ | | | | | | | Circular |
| Grain: shape in profile view | | | | ✓ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | ✓ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | ✓ | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | | ✓ | | | | | | | Yellow |
| Grain: lustre | | | | | | ✓ | | | | | Medium |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

20 ICSSH 31 Salient Features



1. Pedigree: ICSA 38 × ICSV 700
2. Days to 50 % flowering: 75 days.
3. Plant height (m): 3.1
4. Plant girth (mm): 14.2
5. Biomass yield (t ha^{-1}): 51.2
6. Juice yield (t ha^{-1}): 22.4
7. Juice extraction (%): 44
8. Brix (%): 16
9. Sugar yield (t ha^{-1}): 2.7
10. Grain yield (t ha^{-1}): 3.3
11. Male fertility restoration (%): 91
12. Sucrose (%): 8.4
13. Glucose (%): 0.2
14. Fructose (%): 1.4
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter: 9.3
17. Tolerance to: Aphids, Anthracnose, Shootfly, Rust
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid | | | | | | | | | Remarks measured value etc. |
|---|--|---|---|---|---|---|---|---|---|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | √ | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | | | √ | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | √ | | | | | 75 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | √ | | 2.9 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | Absent |
| Stigma length (mm) | | | √ | | | | | | | Short |
| Flower with pedicel: length of flower | | | | | √ | | | | | Medium |
| Anther: length | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | Orange |
| Glume: color | | | | | √ | | | | | Red |
| Plant: total height | | | | | | | | √ | | 3.1 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | √ | | 14.2 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 85.3 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 8.6 |
| Panicle: length without peduncle | | | | | √ | | | | | 27.5 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | 7.6 |
| Panicle: density at maturity (ear head compactness) | | | | | √ | | | | | Semi loose |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | √ | | | | | 14.9 |
| Glume coverage (%) | | | | | √ | | | | | 75 |
| Threshability | | | | | √ | | | | | Partly threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | 32.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | √ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | √ | | | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | Yellow |
| Grain: lustre | | | | | √ | | | | | Medium |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

21 ICSSH 39 Salient Features



1. Pedigree: ICSA 702 × SSV 74
2. Days to 50 % flowering: 74 days.
3. Plant height (m): 3.3
4. Plant girth (mm): 16.4
5. Biomass yield (t ha^{-1}): 46.9
6. Juice yield (t ha^{-1}): 22.5
7. Juice extraction (%): 48
8. Brix (%): 18
9. Sugar yield (t ha^{-1}): 3.0
10. Grain yield (t ha^{-1}): 2.2
11. Male fertility restoration (%): 83
12. Sucrose (%): 8.1
13. Glucose (%): 1.1
14. Fructose (%): 0.4
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter: 9.5
17. Tolerance to: Aphids, Anthracnose, Rust
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA*

| Characteristics | Characteristic value of candidate hybrid | | | | | | | | | Remarks measured value etc. |
|---|--|---|---|---|---|---|---|---|---|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | √ | | | | | | | | | Green |
| Leaf sheath: anthocyanin colouration | √ | | | | | | | | | Green |
| Leaf: midrib colour (5th fully developed leaf) | | √ | | | | | | | | Green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | √ | | | | | 74 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | √ | | 3.0 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | Absent |
| Stigma length (mm) | | | | | √ | | | | | Medium |
| Flower with pedicel: length of flower | | | | | √ | | | | | Medium |
| Anther: length | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | | √ | | | | | Orange |
| Glume: color | | | | | √ | | | | | Red |
| Plant: total height | | | | | | | | √ | | 3.3 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | √ | | 16.4 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 86.4 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 9.5 |
| Panicle: length without peduncle | | | | | √ | | | | | 25.8 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | 9.1 |
| Panicle: density at maturity (ear head compactness) | | | | | √ | | | | | Semi loose |
| Panicle: shape | | | | | √ | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | √ | | | | | 9.3 |
| Glume coverage (%) | √ | | | | | | | | | 25 |
| Threshability | √ | | | | | | | | | Freely threshable |
| Caryopsis: colour after threshing | | | | | √ | | | | | Light yellow |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | 36.0 |
| Grain: shape in dorsal view | | | | | √ | | | | | Circular |
| Grain: shape in profile view | | | | | √ | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | √ | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | | √ | | | | | 75 % corneous |
| Grain: colour of vitreous albumen | | | | | √ | | | | | Yellow |
| Grain: lustre | | | | | | | | √ | | Medium |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

22 ICSSH 58 Salient Features



1. Pedigree: ICSA 731 × ICSA 93046 (First A2 *cms* system based hybrid)
2. Days to 50 % flowering: 79 days.
3. Plant height (m): 3.4
4. Plant girth (mm): 15.0
5. Biomass yield (t ha⁻¹): 57.5
6. Juice yield (t ha⁻¹): 29.4
7. Juice extraction (%): 51
8. Brix (%): 17
9. Sugar yield (t ha⁻¹): 3.8
10. Grain yield (t ha⁻¹): 2.9
11. Male fertility restoration (%): 93
12. Sucrose (%): 9.9
13. Glucose (%): 0.3
14. Fructose (%): 1.2
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m⁻¹) * milli siemens per meter: 9.6
17. Tolerance to: Aphids, Shootfly, Anthracnose.
18. Adaptation: Rainy season

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid | | | | | | | | | Remarks measured value etc. |
|---|--|---|---|---|---|---|---|---|---|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | | | √ | | | | | | | Purple |
| Leaf: midrib colour (5th fully developed leaf) | | | | √ | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | 79 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | √ | | 3.4 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | Absent |
| Stigma length (mm) | | | √ | | | | | | | Short |
| Flower with pedicel: length of flower | | | | | √ | | | | | Medium |
| Anther: length | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | Orange |
| Glume: color | | | | √ | | | | | | Red |
| Plant: total height | | | | | | | √ | | | 3.7 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | √ | | | 15.0 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 85.9 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | √ | | 9.3 |
| Panicle: length without peduncle | | | | | √ | | | | | 20.7 |
| Panicle: length of branches (middle third of panicle) | | | | | √ | | | | | 6.7 |
| Panicle: density at maturity (ear head compactness) | | | | | | | | √ | | Semi compact |
| Panicle: shape | | | √ | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | √ | | | | | | | 8.3 |
| Glume coverage (%) | | | √ | | | | | | | 50 |
| Threshability | | | | | √ | | | | | Partly threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | √ | | | | | 25.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | Circular |
| Grain: size of mark of germ | | | | | √ | | | | | Medium |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | √ | | | 25 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | Yellow |
| Grain: lustre | | | | | √ | | | | | Medium |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

23 ICSSH 25 Salient Features



1. Pedigree: IC675 × ICSV 700
2. Days to 50 % flowering: 77 days.
3. Plant height (m): 3.5
4. Plant girth (mm): 18.1
5. Biomass yield (t ha^{-1}): 54.8
6. Juice yield (t ha^{-1}): 28.5
7. Juice extraction (%): 52
8. Brix (%): 17
9. Sugar yield (t ha^{-1}): 3.6
10. Grain yield (t ha^{-1}): 3.1
11. Male fertility restoration (%): 86
12. Sucrose (%): 6.3
13. Glucose (%): 1.3
14. Fructose (%): 0.3
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter: 10.3
17. Tolerance to: Aphids, Rust.
18. Adaptation: Rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid | | | | | | | | | Remarks measured value etc. | |
|---|--|---|---|---|---|---|---|---|---|-----------------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | | √ | | | | | | | | | Purple |
| Leaf sheath: anthocyanin colouration | | | √ | | | | | | | | Purple |
| Leaf: midrib colour (5th fully developed leaf) | | | | √ | | | | | | | Brown |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | √ | | | | 77 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | √ | | | 3.2 |
| Flag leaf: yellow colouration of midrib | √ | | | | | | | | | | Absent |
| Lemna: arista formation (awns) | √ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | √ | | | | | | | | | | Absent |
| Stigma: yellow coloration | √ | | | | | | | | | | Absent |
| Stigma length (mm) | | | | | | √ | | | | | Medium |
| Flower with pedicel: length of flower | | | | | | √ | | | | | Medium |
| Anther: length | | | | | | √ | | | | | Medium |
| Anther: colour of dry anther | | | | √ | | | | | | | Orange |
| Glume: color | | | | | | √ | | | | | Red |
| Plant: total height | | | | | | | | √ | | | 3.5 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | √ | | | 18.1 |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | | 76.7 |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | √ | | 9.1 |
| Panicle: length without peduncle | | | | | | √ | | | | | 22.9 |
| Panicle: length of branches (middle third of panicle) | | | | | | √ | | | | | 7.8 |
| Panicle: density at maturity (ear head compactness) | | | | | | √ | | | | | Semi loose |
| Panicle: shape | | | √ | | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | √ | | | | | | 7.6 |
| Glume coverage (%) | | | | | | √ | | | | | 25 |
| Threshability | | | | | | √ | | | | | Partly threshable |
| Caryopsis: colour after threshing | √ | | | | | | | | | | White |
| Grain: weight of 1000 grains (g) | | | | | | √ | | | | | 28.0 |
| Grain: shape in dorsal view | | | √ | | | | | | | | Circular |
| Grain: shape in profile view | | | √ | | | | | | | | Circular |
| Grain: size of mark of germ | | | | | | | | √ | | | Large |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | | √ | | | 25 % corneous |
| Grain: colour of vitreous albumen | | | √ | | | | | | | | Yellow |
| Grain: lustre | | | | | | | | √ | | | Lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act

24 CSH 22 SS Salient Features



1. Pedigree: ICSA 38 × SSV 84 (Developed by Directorate of Sorghum Research)
2. Days to 50 % flowering: 84 days.
3. Plant height (m): 3.3
4. Plant girth (mm): 18.5
5. Biomass yield (t ha^{-1}): 51.0
6. Juice yield (t ha^{-1}): 22.8
7. Juice extraction (%): 44.3
8. Brix (%): 17
9. Sugar yield (t ha^{-1}): 2.9
10. Grain yield (t ha^{-1}): 2.7
11. Male fertility restoration (%): 86
12. Sucrose (%): 8.5
13. Glucose (%): 0.3
14. Fructose (%): 1.6
15. pH of juice: 5.0
16. Electrical conductivity of juice (mS m^{-1}) * milli siemens per meter: 8.9
17. Tolerance to: Aphids, Shoot fly.
18. Adaptation: Rainy season/Post rainy season.

Traits recorded as per guidelines for sorghum as approved by PPVFRA^a

| Characteristics | Characteristic value of candidate hybrid | | | | | | | | | Remarks measured value etc. | |
|---|--|---|---|---|---|---|---|---|---|-----------------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Seedling: anthocyanin colouration of coleoptile | | | ✓ | | | | | | | | Yellow green |
| Leaf sheath: anthocyanin colouration | ✓ | | | | | | | | | | Yellow green |
| Leaf: midrib colour (5th fully developed leaf) | ✓ | | | | | | | | | | Yellow green |
| Plant: time of panicle emergence (50 % of the plants with complete panicle emergence) | | | | | | | ✓ | | | | 84 |
| Plant: natural height of foliage up to base of flag leaf | | | | | | | | ✓ | | | 3.0 |
| Flag leaf: yellow colouration of midrib | ✓ | | | | | | | | | | Absent |
| Lemna: arista formation (awns) | ✓ | | | | | | | | | | Absent |
| Stigma: anthocyanin coloration | ✓ | | | | | | | | | | Present |
| Stigma: yellow coloration | | | | | ✓ | | | | | | Absent |
| Stigma length (mm) | | | ✓ | | | | | | | | Medium |
| Flower with pedicel: length of flower | | | | | ✓ | | | | | | Short |
| Anther: length | | | | | ✓ | | | | | | Short |
| Anther: colour of dry anther | | | | ✓ | | | | | | | Grayed orange |
| Glume: color | | | | | ✓ | | | | | | Grayed purple |
| Plant: total height | | | | | | | | ✓ | | | 3.3 |
| Stem: diameter (at lower one-third height of plant) (mm) | | | | | | | | ✓ | | | Medium |
| Leaf: length of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | ✓ | | Very long |
| Leaf: width of blade of the third leaf from top including flag leaf (cm) | | | | | | | | | ✓ | | Vey broad |
| Panicle: length without peduncle | | | | | | ✓ | | | | | Medium |
| Panicle: length of branches (middle third of panicle) | | | | | | ✓ | | | | | Medium |
| Panicle: density at maturity (ear head compactness) | | | | | | ✓ | | | | | Semi compact |
| Panicle: shape | | | ✓ | | | | | | | | Symmetric |
| Neck of panicle: visible length above sheath (cm) | | | | | | | | ✓ | | | Absent or very short |
| Glume coverage (%) | ✓ | | | | | | | | | | Short |
| Threshability | ✓ | | | | | | | | | | Partly thresh able |
| Caryopsis: colour after threshing | ✓ | | | | | | | | | | Grayed orange |
| Grain: weight of 1000 grains (g) | | | | | | ✓ | | | | | 30.0 |
| Grain: shape in dorsal view | | | ✓ | | | | | | | | Circular |
| Grain: shape in profile view | | | ✓ | | | | | | | | Elliptic |
| Grain: size of mark of germ | | | | | | | | ✓ | | | Medium |
| Grain: texture of endosperm (in longitudinal section) | | | | | | | | ✓ | | | 25 % corneous |
| Grain: colour of vitreous albumen | | | ✓ | | | | | | | | Grayed yellow |
| Grain: lustre | | | | | | | | ✓ | | | Lustrous |

^a PPVFRA Protection of Plant Varieties and Farmers Rights Act