



Sweet Sorghum an alternative energy Crop

Grant Agreement n° 227422

WP1

Deliverable 1.5:

*Several hundreds elite B and R-accessions
with interesting biomass traits*

Composition of the consortium

CIRAD
ICRISAT
EMBRAPA
KWS
IFEU
UniBO
UCSC
ARC-GCI
UANL
WIP



Materials listed in Deliverable 1.3 (table 1 and table 2) are also part of the deliverable 1-5 and could be included here. Those materials were identified based on evaluations performed in Germany by KWS.

They can be complemented with the accessions listed in the table 1 here under, selected from the WP1 biomass working collection for presenting interesting traits for biomass production and utilization, based on evaluations carried out by Cirad in France.

This material is not for diffusion to farmer, but will be used to progress WP1 breeding programme.

Table 1.

| Name | vigour at emergence (1-9 scale) | seedling growth (1-9 scale) | Date of 50% flowering | N° of tillers per plant before harvest | Plant height (cm) | Thickness of main stem (1-9 scale) | Lodging before harvest % | Agronomic rating (1-9 scale) | date of harvest | dry matter at harvest (%) | dry biomass yield (t/ha) | Interesting traits for biomass production | Use as male for hybrid production | Use as progenitor for R pool | other traits |
|----------|---------------------------------|-----------------------------|-----------------------|--|-------------------|------------------------------------|--------------------------|------------------------------|-----------------|---------------------------|--------------------------|---|-----------------------------------|------------------------------|--|
| IS 2787 | 5 | 7 | 28/7 | 1 | 200-270 | 5 | 0 | 7 | 12/10 | 36,53 | 25,49 | lodging resistance, good GCA for DM | S | | huge difference for height and flowering between main stem and tillers |
| IS 14331 | 5 | 7 | 25/8 | 1,5 | 300 | 7 | 0 | 7 | 7/10 | 39,18 | 26,33 | plant height, high DM, high fiber content | | S | original, intermediate tillering, only guinea accession with adequate cycle duration and biomass yield |
| IS 16044 | 7 | 7 | >15/9 | 0 | 240-310 | 3 | 50 | 5 | 12/10 | 34,19 | 15,81 | thick stems, no tillering | | S | |
| IS 22332 | 5 | 7 | 25/8 | 1 | 290 | 5 | 20 | 5 | 7/10 | 28,34 | 24,62 | | | S | |
| IS 26833 | 5 | 5 | 8/9 | 0 | 350 | 3 | >50 | 5 | 15/10 | 35,86 | 33,29 | plant height, thick stems, no tillering, high ADL/NDF ratio | | S | high biomass yield but lodging problems |
| IS 28409 | 5 | 5 | 10/8 | 1,5 | 300 | 4 | 10 | 7 | 7/10 | 37,81 | 22,57 | lodging resistance, high DM, sweet stems (brix=17%), not juicy | S | | tillers much higher than main stems, lodging tolerant, very tough stems |
| IS 29310 | 7 | 7 | 28/8 | <1 | 280 | 5 | 20 | 5 | 12/10 | 28,32 | 22,34 | | | S | |
| IS 32569 | 5 | 7 | >15/9 | <1 | 320 | 3 | 30 | 5 | 15/10 | 37,61 | 49,44 | plant height, thick stem, high stem biomass, high cellulose content and fiber digestibility | | S | very high biomass yield but very late |
| SSM 215 | 5 | 5 | 27/8 | 0 | 190 | 3 | 20 | 5 | 12/10 | 28,76 | 20,04 | thick stems, no tillering | | | |

| | | | | | | | | | | | | | | | |
|----------------|---|---|------|------|---------|---|----|---|-------|-------|-------|--|---|---|--|
| IS 19358 | 7 | 5 | 6/8 | 1,5 | 180 | 4 | 0 | 5 | no | no | no | good GCA for biomass yield | S | S | good stay green, not harvested because of low plant density |
| RUSSIA SUGAR-1 | 5 | 5 | 29/7 | <0.5 | 200 | 7 | 20 | 7 | 8/9 | 19,70 | 25,80 | good balance between earliness and biomass yield, sweet stem | | | |
| IS 3385 | 5 | 1 | 9/8 | no | 210 | 1 | 0 | 3 | no | no | no | thick stems, no tillering | | | |
| IS 30351 | 5 | 3 | 10/8 | <1 | 200 | 5 | 10 | 5 | 7/10 | 33,58 | 11,19 | seedling growth and lodging resistant | S | | |
| IS 30435 | 3 | 1 | 1/8 | 0 | 185 | 7 | 0 | 5 | 8/9 | 30,66 | 17,01 | seedling growth, no tillering, lodging resistant | S | | |
| IS 3780 | 5 | 5 | 3/8 | 1 | 270 | 5 | 0 | 5 | 8/9 | 28,32 | 26,29 | good balance between earliness and biomass yield, excellent pollinator | S | | |
| 4Z3261 | 5 | 5 | 6/8 | 0 | 250 | 5 | 20 | 5 | 17/9 | 31,15 | 14,79 | | S | | no tillering, good cycle duration, fairly tolerant to lodging |
| 4Z3224 | 3 | 3 | 9/8 | 0 | 270 | 3 | 0 | 3 | 7/10 | 36,84 | 23,94 | high seedling growth, thick stems and lodging resistant | S | | good stay green, lodging tolerant |
| 4Z3204 | 3 | 1 | 20/7 | 0 | 190 | 7 | 30 | 7 | 25/8 | 33,54 | 10,74 | high seedling growth, early and lodging tolerant | | | |
| 97-10 | 5 | 7 | 26/8 | <1 | 290 | 4 | 60 | 5 | 12/10 | 23,90 | 19,01 | | | | late flowering |
| 98-96 | 5 | 5 | 16/8 | 0 | 220 | 5 | 20 | 7 | 7/10 | 25,86 | 15,92 | | | | |
| 98-172a | 5 | 7 | 29/8 | 0 | 285 | 5 | 10 | 3 | 12/10 | 28,55 | 29,13 | high biomass yield | | S | high biomass yield but late |
| 40-4-3 | 3 | 3 | 18/8 | 0 | 300 | 4 | 0 | 3 | 7/10 | 34,05 | 29,94 | plant height, seedling growth, lodging resistance, dry matter | S | | no tillering, high biomass yield |
| 40-4-1-5 | 3 | 3 | 28/8 | 0 | 330 | 4 | 10 | 3 | 12/10 | 37,79 | 22,32 | plant height, seedling growth, lodging resistance, dry matter | | | |
| 6-6-2-1 | 5 | 5 | 2/9 | 0 | 300 | 4 | 10 | 3 | 12/10 | 38,19 | 31,15 | plant height, high stem biomass yield | | S | high biomass yield |
| cc584 | 5 | 5 | 6/8 | 1,5 | 230-260 | 3 | 10 | 4 | 17/9 | 20,29 | 21,12 | | S | | good stay green, lodging tolerant |
| cc589 | 5 | 5 | 25/8 | 1 | 330 | 3 | 10 | 3 | 7/10 | 28,45 | 42,36 | plant height, thick stems, very high stem biomass yield | | S | high biomass yield |
| IESV9205 6DL | 5 | 3 | 22/8 | >=1 | 215 | 2 | 0 | 5 | 7/10 | 25,93 | 23,64 | seedling growth | | | |
| IS 30332 | 5 | 4 | 6/8 | 0 | 300 | 5 | 0 | 5 | no | no | no | plant height, seedling growth, lodging resistance | S | | no tillering, good plant type, lodging resistant, not harvested because of low plant density |
| IS 30349 | 3 | 3 | 29/7 | 0 | 150 | 7 | 50 | 7 | 25/8 | 26,01 | 13,08 | seedling growth | | | lodging susceptible |

| | | | | | | | | | | | | | | |
|----------------|---|----|--------------|-----|------|---|-----|---|-------|-------|-------|---|---|--|
| IS 37007 | 1 | 1 | 3/8 | 0 | 160 | 7 | 15 | 7 | no | no | no | excellent vigour and seedling growth | S | excellent seedling growth, no tillering, lodging resistant |
| SSM1381 | 7 | 7 | 5/10 | 1 | 360 | 2 | 0 | 3 | no | no | no | plant height and very thick stems | S | not harvested because too late |
| SSM1387 | 9 | | 15/10 | 0 | 400 | 3 | 0 | 5 | no | no | no | plant height and very thick stems | S | very late (but 2d planting), very thick stems |
| SSM1389 | 7 | 5 | >10/10 | 1,5 | >360 | 5 | 0 | 7 | 15/10 | 33,99 | 34,83 | plant height and high stem biomass yield | S | very late, high biomass yield |
| PE3 | 5 | 7 | 29/7 | 0 | 245 | 7 | 0 | 5 | 8/9 | 22,92 | 20,45 | good balance between earliness and biomass yield, lodging resistant | S | |
| IS 4285 | 4 | 4 | 10/9 | 0 | 323 | 3 | 2,5 | 3 | 15/10 | 30,67 | 28,92 | thick stems, no tillering, high stem digestibility | S | |
| RUSSIA SUGAR-2 | 5 | no | 15/8 | 0 | 205 | 5 | 0 | 5 | no | no | no | sweet stems (Brix=19%) and juicy | S | S |
| Sarioso 10 | 5 | no | 27/8 | no | 210 | 3 | 0 | 3 | no | no | no | moderate sweet stems (brix=14 to 18%), juicy | S | |
| IS 929 | 5 | no | 25/8 | 0 | 240 | 3 | 0 | 3 | no | no | no | sweet stems (brix=17-18%) and juicy | S | S |
| IS 18164 | 5 | no | 15/8 | no | 190 | 5 | 0 | 5 | no | no | no | sweet stems (brix=16-19%) and juicy | S | S |
| IS 16396 | 5 | no | no flowering | 1,3 | 335 | 1 | 0 | 3 | no | no | no | high cellulose content in stems | S | photoperiod-sensitive |

1-9 Scale used for rating: 1=excellent; 9=bad

Table 2.: B-lines with a cold tolerance and interesting biomass traits

| IDT | GENOTYPE | DER | POOL | PLASMA | GENER | DtF | KLZ | IDT | GENOTYPE | DER | POOL | PLASMA | GENER |
|---------------|-----------|------|------|--------|-------|-----|-----|---------------|------------------|---------------|------|--------|-------|
| ZC1-41009/001 | E603-**11 | E603 | F | N | S2 | 83 | | ZM1-30010/001 | E603-**1111 | E603 | F | N | S3 |
| ZC1-41009/002 | E603-**12 | E603 | F | N | S2 | 83 | | ZM1-30303/001 | E603A1-**1111BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41009/003 | E603-**13 | E603 | F | N | S2 | 78 | | ZM1-30011/001 | E603-**1211 | E603 | F | N | S3 |
| ZC1-41009/004 | E603-**14 | E603 | F | N | S2 | 79 | | ZM1-30294/016 | E603A1-**1226BC1 | 1Z1064A1xE603 | F | A1 | BC1 |

| | | | | | | | | | | | | |
|---------------|------------|------|---|---|----|----|---------------|-------------------|---------------|---|----|-----|
| ZC1-41009/005 | E603-***16 | E603 | F | N | S2 | 78 | ZM1-30014/001 | E603-***1611 | E603 | F | N | S3 |
| ZC1-41010/001 | E603-***17 | E603 | F | N | S2 | 82 | ZM1-30302/007 | E603A1-***1617BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41010/002 | E603-***22 | E603 | F | N | S2 | 82 | ZM1-30014/002 | E603-***1612 | E603 | F | N | S3 |
| ZC1-41010/003 | E603-***18 | E603 | F | N | S2 | 78 | ZM1-30288/011 | E603A1-***1721BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41010/004 | E603-***19 | E603 | F | N | S2 | 82 | ZM1-30016/002 | E603-***2212 | E603 | F | N | S3 |
| ZC1-41010/005 | E603-***21 | E603 | F | N | S2 | 96 | ZM1-30306/007 | E603A1-***2217BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41010/006 | E603-***20 | E603 | F | N | S2 | 83 | ZM1-30017/001 | E603-***1811 | E603 | F | N | S3 |
| ZC1-41011/001 | E603-***23 | E603 | F | N | S2 | 78 | ZM1-30304/009 | E603A1-***1819BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41011/002 | E603-***26 | E603 | F | N | S2 | 83 | ZM1-30017/002 | E603-***1812 | E603 | F | N | S3 |
| ZC1-41011/003 | E603-***28 | E603 | F | N | S2 | 78 | ZM1-30304/013 | E603A1-***1923BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41011/004 | E603-***27 | E603 | F | N | S2 | 83 | ZM1-30019/001 | E603-***2111 | E603 | F | N | S3 |
| ZC1-41011/005 | E603-***25 | E603 | F | N | S2 | 83 | ZM1-30302/005 | E603A1-***2115BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41012/001 | E603-***29 | E603 | F | N | S2 | 83 | ZM1-30021/001 | E603-***2311 | E603 | F | N | S3 |
| ZC1-41012/002 | E603-***33 | E603 | F | N | S2 | 85 | ZM1-30299/007 | E603A1-***2317BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41012/003 | E603-***34 | E603 | F | N | S2 | 83 | ZM1-30022/001 | E603-***2611 | E603 | F | N | S3 |
| ZC1-41012/004 | E603-***30 | E603 | F | N | S2 | 83 | ZM1-30300/010 | E603A1-***2620BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41012/005 | E603-***32 | E603 | F | N | S2 | 79 | ZM1-30023/001 | E603-***2811 | E603 | F | N | S3 |
| ZC1-41012/006 | E603-***31 | E603 | F | N | S2 | 79 | ZM1-30298/001 | E603A1-***2811BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41013/001 | E603-***35 | E603 | F | N | S2 | 83 | ZM1-30024/002 | E603-***2712 | E603 | F | N | S3 |
| ZC1-41013/002 | E603-***39 | E603 | F | N | S2 | 83 | ZM1-30298/008 | please code | 1Z1064A1xE603 | F | A1 | F1 |
| ZC1-41013/003 | E603-***38 | E603 | F | N | S2 | 79 | ZM1-30025/001 | E603-***2511 | E603 | F | N | S3 |
| ZC1-41014/001 | E603-***40 | E603 | F | N | S2 | 79 | ZM1-30299/006 | E603A1-***2516BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41014/002 | E603-***45 | E603 | F | N | S2 | 83 | ZM1-30029/001 | E603-***3011 | E603 | F | N | S3 |
| ZC1-41014/003 | E603-***42 | E603 | F | N | S2 | 84 | ZM1-30295/011 | E603A1-***3021BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41014/004 | E603-***43 | E603 | F | N | S2 | 84 | ZM1-30030/002 | E603-***3212 | E603 | F | N | S3 |
| ZC1-41014/005 | E603-***44 | E603 | F | N | S2 | 84 | ZM1-30295/005 | E603A1-***3115BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41015/001 | E603-***46 | E603 | F | N | S2 | 85 | ZM1-30035/002 | E603-***4012 | E603 | F | N | S3 |
| ZC1-41015/002 | E603-***50 | E603 | F | N | S2 | 85 | ZM1-30304/002 | E603A1-***4012BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41015/003 | E603-***51 | E603 | F | N | S2 | 83 | ZM1-30036/001 | E603-***4511 | E603 | F | N | S3 |
| ZC1-41015/004 | E603-***49 | E603 | F | N | S2 | 76 | ZM1-30298/004 | E603A1-***4514BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41015/005 | E603-***47 | E603 | F | N | S2 | 79 | ZM1-30037/001 | E603-***4211 | E603 | F | N | S3 |
| ZC1-41016/001 | E603-***52 | E603 | F | N | S2 | 77 | ZM1-30294/001 | E603A1-***4211BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41016/002 | E603-***56 | E603 | F | N | S2 | 83 | ZM1-30038/001 | E603-***4311 | E603 | F | N | S3 |

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|---------------|-----------|------|---|---|----|----|---------------|------------------|---------------|---|----|-----|
| ZC1-41016/003 | E603-**57 | E603 | F | N | S2 | 78 | ZM1-30300/015 | E603A1-**4325BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41016/004 | E603-**53 | E603 | F | N | S2 | 82 | ZM1-30040/001 | E603-**4611 | E603 | F | N | S3 |
| ZC1-41016/005 | E603-**54 | E603 | F | N | S2 | 79 | ZM1-30302/001 | E603A1-**4611BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41016/006 | E603-**55 | E603 | F | N | S2 | 78 | ZM1-30041/001 | E603-**5011 | E603 | F | N | S3 |
| ZC1-41017/001 | E603-**58 | E603 | F | N | S2 | 82 | ZM1-30292/005 | E603A1-**5015BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41017/002 | E603-**63 | E603 | F | N | S2 | 82 | ZM1-30042/001 | E603-**5111 | E603 | F | N | S3 |
| ZC1-41017/003 | E603-**59 | E603 | F | N | S2 | 96 | ZM1-30292/001 | E603A1-**5111BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41017/004 | E603-**62 | E603 | F | N | S2 | 83 | ZM1-30043/001 | E603-**4911 | E603 | F | N | S3 |
| ZC1-41017/005 | E603-**60 | E603 | F | N | S2 | 83 | ZM1-30290/013 | E603A1-**4923BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41017/006 | E603-**61 | E603 | F | N | S2 | 82 | ZM1-30044/001 | E603-**4711 | E603 | F | N | S3 |
| ZC1-41018/001 | E603-**64 | E603 | F | N | S2 | 98 | ZM1-30294/011 | E603A1-**4721BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41018/002 | E603-**69 | E603 | F | N | S2 | 78 | ZM1-30046/002 | E603-**5612 | E603 | F | N | S3 |
| ZC1-41018/003 | E603-**66 | E603 | F | N | S2 | 83 | ZM1-30307/007 | E603A1-**5617BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41018/004 | E603-**67 | E603 | F | N | S2 | 83 | ZM1-30047/001 | E603-**5711 | E603 | F | N | S3 |
| ZC1-41018/005 | E603-**68 | E603 | F | N | S2 | 82 | ZM1-30293/006 | E603A1-**5716BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41018/006 | E603-**65 | E603 | F | N | S2 | 82 | ZM1-30048/001 | E603-**5311 | E603 | F | N | S3 |
| ZC1-41019/001 | E606-**11 | E606 | F | N | S2 | 80 | ZM1-30051/001 | E603-**5811 | E603 | F | N | S3 |
| ZC1-41019/002 | E606-**15 | E606 | F | N | S2 | 82 | ZM1-30294/014 | E603A1-**5824BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41019/003 | E606-**16 | E606 | F | N | S2 | 83 | ZM1-30053/001 | E603-**5911 | E603 | F | N | S3 |
| ZC1-41019/004 | E606-**14 | E606 | F | N | S2 | 83 | ZM1-30285/015 | E603A1-**5925BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41019/005 | E606-**12 | E606 | F | N | S2 | 83 | ZM1-30057/001 | E603-**6411 | E603 | F | N | S3 |
| ZC1-41019/006 | E606-**13 | E606 | F | N | S2 | 82 | ZM1-30300/005 | E603A1-**6415BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41020/001 | E606-**17 | E606 | F | N | S2 | 83 | ZM1-30058/001 | E603-**6911 | E603 | F | N | S3 |
| ZC1-41020/002 | E606-**21 | E606 | F | N | S2 | 79 | ZM1-30305/003 | E603A1-**6913BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41020/003 | E606-**22 | E606 | F | N | S2 | 82 | ZM1-30059/001 | E603-**6611 | E603 | F | N | S3 |
| ZC1-41020/004 | E606-**18 | E606 | F | N | S2 | 79 | ZM1-30305/004 | E603A1-**6614BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41020/005 | E606-**19 | E606 | F | N | S2 | 79 | ZM1-30060/001 | E603-**6711 | E603 | F | N | S3 |
| ZC1-41021/001 | E606-**23 | E606 | F | N | S2 | 81 | ZM1-30300/014 | E603A1-**6724BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41021/002 | E606-**28 | E606 | F | N | S2 | 78 | ZM1-30061/002 | E603-**6812 | E603 | F | N | S3 |
| ZC1-41021/003 | E606-**24 | E606 | F | N | S2 | 78 | ZM1-30306/008 | E603A1-**6518BC1 | 1Z1064A1xE603 | F | A1 | BC1 |
| ZC1-41021/004 | E606-**27 | E606 | F | N | S2 | 78 | ZM1-30065/001 | E606-**1511 | E606 | F | N | S3 |
| ZC1-41022/001 | E606-**29 | E606 | F | N | S2 | 78 | ZM1-30305/009 | E606A1-**1519BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41022/002 | E606-**34 | E606 | F | N | S2 | 76 | ZM1-30066/001 | E606-**1611 | E606 | F | N | S3 |

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|---------------|-----------|------|---|---|----|----|---------------|------------------|---------------|---|----|-----|
| ZC1-41022/003 | E606-**31 | E606 | F | N | S2 | 76 | ZM1-30303/009 | E606A1-**1619BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41022/004 | E606-**32 | E606 | F | N | S2 | 78 | ZM1-30067/001 | E606-**1411 | E606 | F | N | S3 |
| ZC1-41022/005 | E606-**33 | E606 | F | N | S2 | 76 | ZM1-30307/003 | E606A1-**1413BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41022/006 | E606-**30 | E606 | F | N | S2 | 81 | ZM1-30070/001 | E606-**1711 | E606 | F | N | S3 |
| ZC1-41023/001 | E606-**35 | E606 | F | N | S2 | 78 | ZM1-30308/003 | E606A1-**1713BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41023/002 | E606-**39 | E606 | F | N | S2 | 78 | ZM1-30071/001 | E606-**2111 | E606 | F | N | S3 |
| ZC1-41023/003 | E606-**40 | E606 | F | N | S2 | 78 | ZM1-30288/006 | E606A1-**2116BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41023/004 | E606-**38 | E606 | F | N | S2 | 83 | ZM1-30072/001 | E606-**2211 | E606 | F | N | S3 |
| ZC1-41023/005 | E606-**36 | E606 | F | N | S2 | 82 | ZM1-30285/003 | E606A1-**2213BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41024/001 | E606-**41 | E606 | F | N | S2 | 79 | ZM1-30073/001 | E606-**1811 | E606 | F | N | S3 |
| ZC1-41024/002 | E606-**45 | E606 | F | N | S2 | 81 | ZM1-30287/007 | E606A1-**1817BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41024/003 | E606-**46 | E606 | F | N | S2 | 81 | ZM1-30076/001 | E606-**2811 | E606 | F | N | S3 |
| ZC1-41024/004 | E606-**42 | E606 | F | N | S2 | 78 | ZM1-30285/002 | E606A1-**2812BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41024/005 | E606-**43 | E606 | F | N | S2 | 78 | ZM1-30077/001 | E606-**2411 | E606 | F | N | S3 |
| ZC1-41024/006 | E606-**44 | E606 | F | N | S2 | 79 | ZM1-30285/014 | E606A1-**2424BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41025/001 | E606-**47 | E606 | F | N | S2 | 79 | ZM1-30080/002 | E606-**3412 | E606 | F | N | S3 |
| ZC1-41025/002 | E606-**52 | E606 | F | N | S2 | 83 | ZM1-30288/014 | E606A1-**3424BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41025/003 | E606-**48 | E606 | F | N | S2 | 78 | ZM1-30081/001 | E606-**3111 | E606 | F | N | S3 |
| ZC1-41025/004 | E606-**51 | E606 | F | N | S2 | 83 | ZM1-30290/010 | E606A1-**3120BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41025/005 | E606-**49 | E606 | F | N | S2 | 83 | ZM1-30081/002 | E606-**3112 | E606 | F | N | S3 |
| ZC1-41026/001 | E606-**53 | E606 | F | N | S2 | 82 | ZM1-30290/015 | E606A1-**3225BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41026/002 | E606-**58 | E606 | F | N | S2 | 82 | ZM1-30085/002 | E606-**3512 | E606 | F | N | S3 |
| ZC1-41026/003 | E606-**55 | E606 | F | N | S2 | 78 | ZM1-30285/001 | E606A1-**3511BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41026/004 | E606-**56 | E606 | F | N | S2 | 81 | ZM1-30086/001 | E606-**3911 | E606 | F | N | S3 |
| ZC1-41026/005 | E606-**57 | E606 | F | N | S2 | 81 | ZM1-30300/006 | E606A1-**3916BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41026/006 | E606-**54 | E606 | F | N | S2 | 79 | ZM1-30089/001 | E606-**3611 | E606 | F | N | S3 |
| ZC1-41027/001 | E606-**59 | E606 | F | N | S2 | 78 | ZM1-30296/001 | E606A1-**3611BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41027/002 | E606-**63 | E606 | F | N | S2 | 79 | ZM1-30089/002 | E606-**3612 | E606 | F | N | S3 |
| ZC1-41027/003 | E606-**64 | E606 | F | N | S2 | 78 | ZM1-30300/011 | E606A1-**3621BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41027/004 | E606-**62 | E606 | F | N | S2 | 78 | ZM1-30090/001 | E606-**4111 | E606 | F | N | S3 |
| ZC1-41027/005 | E606-**60 | E606 | F | N | S2 | 79 | ZM1-30289/003 | E606A1-**4113BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41027/006 | E606-**61 | E606 | F | N | S2 | 81 | ZM1-30090/002 | E606-**4112 | E606 | F | N | S3 |
| ZC1-41028/001 | E606-**65 | E606 | F | N | S2 | 80 | ZM1-30298/009 | E606A1-**4519BC1 | 1Z1064A1xE606 | F | A1 | BC1 |

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| ZC1-41028/002 | E606-**68 | E606 | F | N | S2 | 78 | ZM1-30092/001 | E606-**4611 | E606 | F | N | S3 |
| ZC1-41028/003 | E606-**69 | E606 | F | N | S2 | 81 | ZM1-30289/006 | E606A1-**4616BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41029/001 | E611-**11 | E611 | F | N | S2 | 78 | ZM1-30096/001 | E606-**4711 | E606 | F | N | S3 |
| ZC1-41029/002 | E611-**16 | E611 | F | N | S2 | 76 | ZM1-30285/006 | E606A1-**4716BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41029/003 | E611-**12 | E611 | F | N | S2 | 76 | ZM1-30096/002 | E606-**4712 | E606 | F | N | S3 |
| ZC1-41029/004 | E611-**13 | E611 | F | N | S2 | 78 | ZM1-30286/002 | E606A1-**4712BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41029/005 | E611-**15 | E611 | F | N | S2 | 78 | ZM1-30098/002 | E606-**4812 | E606 | F | N | S3 |
| ZC1-41029/006 | E611-**14 | E611 | F | N | S2 | 79 | ZM1-30291/011 | E606A1-**4821BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41030/001 | E611-**17 | E611 | F | N | S2 | 79 | ZM1-30099/001 | E606-**5111 | E606 | F | N | S3 |
| ZC1-41030/002 | E611-**20 | E611 | F | N | S2 | 79 | ZM1-30285/012 | E606A1-**5122BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41030/003 | E611-**22 | E611 | F | N | S2 | 79 | ZM1-30100/002 | E606-**4912 | E606 | F | N | S3 |
| ZC1-41030/004 | E611-**21 | E611 | F | N | S2 | 76 | ZM1-30288/004 | E606A1-**4914BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41030/005 | E611-**19 | E611 | F | N | S2 | 78 | ZM1-30101/001 | E606-**5311 | E606 | F | N | S3 |
| ZC1-41030/006 | E611-**18 | E611 | F | N | S2 | 78 | ZM1-30287/002 | E606A1-**5312BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41031/001 | E611-**23 | E611 | F | N | S2 | 78 | ZM1-30102/001 | E606-**5811 | E606 | F | N | S3 |
| ZC1-41031/002 | E611-**27 | E611 | F | N | S2 | 78 | ZM1-30288/013 | E606A1-**5823BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41031/003 | E611-**28 | E611 | F | N | S2 | 79 | ZM1-30103/001 | E606-**5511 | E606 | F | N | S3 |
| ZC1-41031/004 | E611-**24 | E611 | F | N | S2 | 78 | ZM1-30293/002 | E606A1-**5512BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41031/005 | E611-**26 | E611 | F | N | S2 | 78 | ZM1-30103/002 | E606-**5512 | E606 | F | N | S3 |
| ZC1-41032/001 | E611-**29 | E611 | F | N | S2 | 78 | ZM1-30287/006 | E606A1-**5616BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41032/002 | E611-**34 | E611 | F | N | S2 | 79 | ZM1-30108/001 | E606-**6311 | E606 | F | N | S3 |
| ZC1-41032/003 | E611-**33 | E611 | F | N | S2 | 78 | ZM1-30288/005 | E606A1-**6315BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41032/004 | E611-**30 | E611 | F | N | S2 | 78 | ZM1-30109/001 | E606-**6411 | E606 | F | N | S3 |
| ZC1-41032/005 | E611-**31 | E611 | F | N | S2 | 78 | ZM1-30289/012 | E606A1-**6422BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41032/006 | E611-**32 | E611 | F | N | S2 | 78 | ZM1-30110/002 | E606-**6212 | E606 | F | N | S3 |
| ZC1-41033/001 | E611-**35 | E611 | F | N | S2 | 79 | ZM1-30293/009 | E606A1-**6219BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41033/002 | E611-**40 | E611 | F | N | S2 | 79 | ZM1-30111/001 | E606-**6011 | E606 | F | N | S3 |
| ZC1-41033/003 | E611-**36 | E611 | F | N | S2 | 78 | ZM1-30294/002 | E606A1-**6012BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41033/004 | E611-**37 | E611 | F | N | S2 | 79 | ZM1-30113/001 | E606-**6511 | E606 | F | N | S3 |
| ZC1-41033/005 | E611-**39 | E611 | F | N | S2 | 76 | ZM1-30304/011 | E606A1-**6521BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41033/006 | E611-**38 | E611 | F | N | S2 | 89 | ZM1-30115/001 | E606-**6911 | E606 | F | N | S3 |
| ZC1-41034/001 | E611-**41 | E611 | F | N | S2 | 77 | ZM1-30287/012 | E606A1-**6922BC1 | 1Z1064A1xE606 | F | A1 | BC1 |
| ZC1-41035/004 | E611-**48 | E611 | F | N | S2 | 77 | ZM1-30118/001 | E611-**1111 | E611 | F | N | S3 |

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| ZC1-41035/005 | E611-**50 | E611 | F | N | S2 | 77 | ZM1-30291/017 | E611A1-**1127BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41035/006 | E611-**49 | E611 | F | N | S2 | 78 | ZM1-30121/001 | E611-**1311 | E611 | F | N | S3 |
| ZC1-41036/001 | E611-**53 | E611 | F | N | S2 | 78 | ZM1-30291/006 | E611A1-**1316BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41036/002 | E611-**57 | E611 | F | N | S2 | 76 | ZM1-30122/001 | E611-**1511 | E611 | F | N | S3 |
| ZC1-41036/003 | E611-**56 | E611 | F | N | S2 | 83 | ZM1-30291/002 | E611A1-**1512BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41036/004 | E611-**54 | E611 | F | N | S2 | 77 | ZM1-30124/001 | E611-**1711 | E611 | F | N | S3 |
| ZC1-41037/001 | E611-**58 | E611 | F | N | S2 | 81 | ZM1-30291/003 | E611A1-**1713BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41037/002 | E611-**63 | E611 | F | N | S2 | 78 | ZM1-30125/001 | E611-**2011 | E611 | F | N | S3 |
| ZC1-41037/003 | E611-**60 | E611 | F | N | S2 | 79 | ZM1-30292/007 | E611A1-**2017BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41037/004 | E611-**61 | E611 | F | N | S2 | 77 | ZM1-30125/002 | E611-**2012 | E611 | F | N | S3 |
| ZC1-41037/005 | E611-**62 | E611 | F | N | S2 | 76 | ZM1-30295/013 | E611A1-**2223BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41037/006 | E611-**59 | E611 | F | N | S2 | 79 | ZM1-30130/001 | E611-**2311 | E611 | F | N | S3 |
| ZC1-41038/001 | E611-**64 | E611 | F | N | S2 | 76 | ZM1-30294/008 | E611A1-**2318BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41038/002 | E611-**68 | E611 | F | N | S2 | 79 | ZM1-30135/001 | E611-**2911 | E611 | F | N | S3 |
| ZC1-41038/003 | E611-**69 | E611 | F | N | S2 | 78 | ZM1-30290/012 | E611A1-**2922BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41038/004 | E611-**67 | E611 | F | N | S2 | 78 | ZM1-30135/002 | E611-**2912 | E611 | F | N | S3 |
| ZC1-41038/005 | E611-**65 | E611 | F | N | S2 | 81 | ZM1-30295/010 | E611A1-**3420BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41038/006 | E611-**66 | E611 | F | N | S2 | 77 | ZM1-30137/002 | E611-**3312 | E611 | F | N | S3 |
| ZC1-41039/001 | E613-**11 | E613 | F | N | S2 | 83 | ZM1-30145/001 | E611-**3911 | E611 | F | N | S3 |
| ZC1-41039/002 | E613-**15 | E613 | F | N | S2 | 77 | ZM1-30298/011 | E611A1-**3921BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41039/003 | E613-**16 | E613 | F | N | S2 | 77 | ZM1-30146/002 | E611-**3812 | E611 | F | N | S3 |
| ZC1-41039/004 | E613-**12 | E613 | F | N | S2 | 78 | ZM1-30297/010 | E611A1-**3820BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41039/005 | E613-**13 | E613 | F | N | S2 | 78 | ZM1-30147/002 | E611-**4112 | E611 | F | N | S3 |
| ZC1-41039/006 | E613-**14 | E613 | F | N | S2 | 79 | ZM1-30297/003 | E611A1-**4113BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41040/001 | E613-**17 | E613 | F | N | S2 | 77 | ZM1-30154/001 | E611-**5111 | E611 | F | N | S3 |
| ZC1-41040/002 | E613-**22 | E613 | F | N | S2 | 79 | ZM1-30294/005 | E611A1-**5115BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41040/003 | E613-**18 | E613 | F | N | S2 | 78 | ZM1-30159/001 | E611-**5311 | E611 | F | N | S3 |
| ZC1-41040/004 | E613-**21 | E613 | F | N | S2 | 79 | ZM1-30294/003 | E611A1-**5313BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41040/005 | E613-**19 | E613 | F | N | S2 | 83 | ZM1-30159/002 | E611-**5312 | E611 | F | N | S3 |
| ZC1-41040/006 | E613-**20 | E613 | F | N | S2 | 83 | ZM1-30293/007 | E611A1-**5317BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41041/001 | E613-**23 | E613 | F | N | S2 | 81 | ZM1-30161/001 | E611-**5611 | E611 | F | N | S3 |
| ZC1-41041/002 | E613-**28 | E613 | F | N | S2 | 77 | ZM1-30289/007 | E611A1-**5617BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41041/003 | E613-**25 | E613 | F | N | S2 | 79 | ZM1-30161/002 | E611-**5612 | E611 | F | N | S3 |

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| ZC1-41041/004 | E613-***26 | E613 | F | N | S2 | 75 | ZM1-30294/012 | E611A1-***5622BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41041/005 | E613-***27 | E613 | F | N | S2 | 75 | ZM1-30163/001 | E611-***5811 | E611 | F | N | S3 |
| ZC1-41042/001 | E613-***29 | E613 | F | N | S2 | 76 | ZM1-30299/002 | E611A1-***5812BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41042/002 | E613-***32 | E613 | F | N | S2 | 83 | ZM1-30169/002 | E611-***6412 | E611 | F | N | S3 |
| ZC1-41042/003 | E613-***33 | E613 | F | N | S2 | 76 | ZM1-30306/004 | E611A1-***6414BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41042/004 | E613-***31 | E613 | F | N | S2 | 81 | ZM1-30170/001 | E611-***6811 | E611 | F | N | S3 |
| ZC1-41043/001 | E613-***34 | E613 | F | N | S2 | 78 | ZM1-30303/011 | E611A1-***6821BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41043/002 | E613-***39 | E613 | F | N | S2 | 79 | ZM1-30171/002 | E611-***6912 | E611 | F | N | S3 |
| ZC1-41043/003 | E613-***38 | E613 | F | N | S2 | 78 | ZM1-30301/005 | E611A1-***6915BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41043/004 | E613-***35 | E613 | F | N | S2 | 83 | ZM1-30173/001 | E611-***6511 | E611 | F | N | S3 |
| ZC1-41043/005 | E613-***36 | E613 | F | N | S2 | 81 | ZM1-30300/003 | E611A1-***6513BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41044/001 | E613-***40 | E613 | F | N | S2 | 79 | ZM1-30174/002 | E611-***6612 | E611 | F | N | S3 |
| ZC1-41044/002 | E613-***41 | E613 | F | N | S2 | 79 | ZM1-30299/003 | E611A1-***6613BC1 | 1Z1064A1xE611 | F | A1 | BC1 |
| ZC1-41044/003 | E613-***42 | E613 | F | N | S2 | 78 | ZM1-30184/002 | E613-***1112 | E613 | F | N | S3 |
| ZC1-41044/004 | E613-***43 | E613 | F | N | S2 | 79 | ZM1-30300/012 | E613A1-***1122BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41044/005 | E613-***44 | E613 | F | N | S2 | 79 | ZM1-30185/002 | E613-***1512 | E613 | F | N | S3 |
| ZC1-41044/006 | E613-***45 | E613 | F | N | S2 | 79 | ZM1-30292/011 | E613A1-***1521BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41045/001 | E613-***46 | E613 | F | N | S2 | 79 | ZM1-30186/001 | E613-***1611 | E613 | F | N | S3 |
| ZC1-41045/002 | E613-***47 | E613 | F | N | S2 | 81 | ZM1-30301/010 | E613A1-***1620BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41045/003 | E613-***48 | E613 | F | N | S2 | 81 | ZM1-30187/002 | E613-***1212 | E613 | F | N | S3 |
| ZC1-41045/004 | E613-***49 | E613 | F | N | S2 | 78 | ZM1-30295/006 | E613A1-***1316BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41045/005 | E613-***50 | E613 | F | N | S2 | 76 | ZM1-30191/001 | E613-***2211 | E613 | F | N | S3 |
| ZC1-41045/006 | E613-***51 | E613 | F | N | S2 | 96 | ZM1-30295/009 | E613A1-***2219BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41046/001 | E613-***52 | E613 | F | N | S2 | 78 | ZM1-30194/001 | E613-***1911 | E613 | F | N | S3 |
| ZC1-41046/002 | E613-***53 | E613 | F | N | S2 | 83 | ZM1-30293/001 | E613A1-***1911BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41046/003 | E613-***54 | E613 | F | N | S2 | 77 | ZM1-30194/002 | E613-***1912 | E613 | F | N | S3 |
| ZC1-41046/004 | E613-***55 | E613 | F | N | S2 | 81 | ZM1-30294/013 | E613A1-***1923BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41047/001 | E613-***58 | E613 | F | N | S2 | 78 | ZM1-30199/001 | E613-***2611 | E613 | F | N | S3 |
| ZC1-41047/002 | E613-***59 | E613 | F | N | S2 | 83 | ZM1-30294/007 | E613A1-***2617BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41047/003 | E613-***60 | E613 | F | N | S2 | 81 | ZM1-30200/002 | E613-***2712 | E613 | F | N | S3 |
| ZC1-41047/004 | E613-***61 | E613 | F | N | S2 | 77 | ZM1-30294/019 | E613A1-***2729BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41047/005 | E613-***62 | E613 | F | N | S2 | 78 | ZM1-30202/002 | E613-***3212 | E613 | F | N | S3 |
| ZC1-41047/006 | E613-***63 | E613 | F | N | S2 | 78 | ZM1-30289/008 | E613A1-***3218BC1 | 1Z1064A1xE613 | F | A1 | BC1 |

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| ZC1-41048/001 | E613-**64 | E613 | F | N | S2 | 83 | ZM1-30203/002 | E613-**3312 | E613 | F | N | S3 |
| ZC1-41048/002 | E613-**65 | E613 | F | N | S2 | 76 | ZM1-30296/002 | E613A1-**3112BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41048/003 | E613-**66 | E613 | F | N | S2 | 83 | ZM1-30208/001 | E613-**3511 | E613 | F | N | S3 |
| ZC1-41048/004 | E613-**67 | E613 | F | N | S2 | 77 | ZM1-30294/010 | E613A1-**3520BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41048/005 | E613-**68 | E613 | F | N | S2 | 79 | ZM1-30218/001 | E613-**4811 | E613 | F | N | S3 |
| ZC1-41048/006 | E613-**69 | E613 | F | N | S2 | 78 | ZM1-30302/008 | E613A1-**4818BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41049/001 | E614-**11 | E614 | F | N | S2 | 76 | ZM1-30219/001 | E613-**4911 | E613 | F | N | S3 |
| ZC1-41049/002 | E614-**12 | E614 | F | N | S2 | 77 | ZM1-30220/001 | E613-**5011 | E613 | F | N | S3 |
| ZC1-41049/003 | E614-**13 | E614 | F | N | S2 | 76 | ZM1-30300/001 | E613A1-**5011BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41049/004 | E614-**14 | E614 | F | N | S2 | 77 | ZM1-30221/001 | E613-**5111 | E613 | F | N | S3 |
| ZC1-41049/005 | E614-**15 | E614 | F | N | S2 | 77 | ZM1-30290/016 | E613A1-**5126BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41050/001 | E614-**17 | E614 | F | N | S2 | 78 | ZM1-30221/002 | E613-**5112 | E613 | F | N | S3 |
| ZC1-41050/002 | E614-**18 | E614 | F | N | S2 | 78 | ZM1-30291/007 | E613A1-**5117BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41050/003 | E614-**19 | E614 | F | N | S2 | 76 | ZM1-30223/001 | E613-**5311 | E613 | F | N | S3 |
| ZC1-41050/004 | E614-**20 | E614 | F | N | S2 | 77 | ZM1-30286/011 | E613A1-**5321BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41050/005 | E614-**21 | E614 | F | N | S2 | 78 | ZM1-30224/001 | E613-**5411 | E613 | F | N | S3 |
| ZC1-41051/001 | E614-**22 | E614 | F | N | S2 | 76 | ZM1-30285/005 | E613A1-**5415BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41051/002 | E614-**23 | E614 | F | N | S2 | 76 | ZM1-30224/002 | E613-**5412 | E613 | F | N | S3 |
| ZC1-41051/003 | E614-**24 | E614 | F | N | S2 | 76 | ZM1-30304/006 | E613A1-**5516BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41051/004 | E614-**25 | E614 | F | N | S2 | 76 | ZM1-30226/001 | E613-**5811 | E613 | F | N | S3 |
| ZC1-41051/005 | E614-**26 | E614 | F | N | S2 | 76 | ZM1-30286/009 | E613A1-**5819BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41051/006 | E614-**27 | E614 | F | N | S2 | 76 | ZM1-30227/001 | E613-**5911 | E613 | F | N | S3 |
| ZC1-41052/001 | E614-**28 | E614 | F | N | S2 | 77 | ZM1-30286/007 | E613A1-**5917BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41052/002 | E614-**29 | E614 | F | N | S2 | 77 | ZM1-30227/002 | E613-**5912 | E613 | F | N | S3 |
| ZC1-41052/003 | E614-**30 | E614 | F | N | S2 | 78 | ZM1-30286/010 | E613A1-**5920BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41052/004 | E614-**31 | E614 | F | N | S2 | 78 | ZM1-30228/001 | E613-**6011 | E613 | F | N | S3 |
| ZC1-41053/001 | E614-**32 | E614 | F | N | S2 | 76 | ZM1-30287/011 | E613A1-**6021BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41053/002 | E614-**33 | E614 | F | N | S2 | 77 | ZM1-30229/001 | E613-**6111 | E613 | F | N | S3 |
| ZC1-41053/003 | E614-**34 | E614 | F | N | S2 | 76 | ZM1-30295/008 | E613A1-**6118BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41054/001 | E614-**35 | E614 | F | N | S2 | 77 | ZM1-30230/001 | E613-**6211 | E613 | F | N | S3 |
| ZC1-41054/002 | E614-**36 | E614 | F | N | S2 | 78 | ZM1-30288/009 | E613A1-**6219BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41054/003 | E614-**37 | E614 | F | N | S2 | 77 | ZM1-30232/001 | E613-**6411 | E613 | F | N | S3 |
| ZC1-41054/004 | E614-**38 | E614 | F | N | S2 | 83 | ZM1-30289/002 | E613A1-**6412BC1 | 1Z1064A1xE613 | F | A1 | BC1 |

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|---------------|-----------|----------|---|----|-----|-----|---------------|------------------|---------------|---|----|-----|
| ZC1-41055/001 | E614-**41 | E614 | F | N | S2 | 76 | ZM1-30233/001 | E613-**6511 | E613 | F | N | S3 |
| ZC1-41055/002 | E614-**42 | E614 | F | N | S2 | 79 | ZM1-30287/010 | E613A1-**6520BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41055/003 | E614-**43 | E614 | F | N | S2 | 76 | ZM1-30234/001 | E613-**6611 | E613 | F | N | S3 |
| ZC1-41056/001 | E614-**47 | E614 | F | N | S2 | 81 | ZM1-30291/013 | E613A1-**6623BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41056/002 | E614-**48 | E614 | F | N | S2 | 77 | ZM1-30234/002 | E613-**6612 | E613 | F | N | S3 |
| ZC1-41056/003 | E614-**49 | E614 | F | N | S2 | 79 | ZM1-30291/016 | E613A1-**6826BC1 | 1Z1064A1xE613 | F | A1 | BC1 |
| ZC1-41056/004 | E614-**50 | E614 | F | N | S2 | 77 | ZM1-30238/002 | E614-**1112 | E614 | F | N | S3 |
| ZC1-41056/005 | E614-**51 | E614 | F | N | S2 | 77 | ZM1-30291/014 | E614A1-**1224BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZC1-41056/006 | E614-**52 | E614 | F | N | S2 | 78 | ZM1-30241/001 | E614-**1311 | E614 | F | N | S3 |
| ZC1-41057/001 | E614-**53 | E614 | F | N | S2 | 78 | ZM1-30292/004 | E614A1-**1314BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZC1-41057/002 | E614-**54 | E614 | F | N | S2 | 76 | ZM1-30242/001 | E614-**1411 | E614 | F | N | S3 |
| ZC1-41057/003 | E614-**55 | E614 | F | N | S2 | 79 | ZM1-30292/009 | E614A1-**1419BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZC1-41057/004 | E614-**56 | E614 | F | N | S2 | 77 | ZM1-30244/001 | E614-**1711 | E614 | F | N | S3 |
| ZC1-41058/001 | E614-**59 | E614 | F | N | S2 | 79 | ZM1-30297/014 | E614A1-**1724BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZC1-41058/002 | E614-**60 | E614 | F | N | S2 | 75 | ZM1-30245/002 | E614-**1812 | E614 | F | N | S3 |
| ZC1-41058/003 | E614-**61 | E614 | F | N | S2 | 79 | ZM1-30297/002 | E614A1-**1812BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZC1-41058/004 | E614-**62 | E614 | F | N | S2 | 78 | ZM1-30246/001 | E614-**1911 | E614 | F | N | S3 |
| ZC1-41058/005 | E614-**63 | E614 | F | N | S2 | 75 | ZM1-30286/008 | E614A1-**1918BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| Z8P-1603 | E614-**64 | E614 | F | N | S2 | 108 | ZM1-30246/002 | E614-**1912 | E614 | F | N | S3 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30286/012 | E614A1-**1922BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30247/001 | E614-**2011 | E614 | F | N | S3 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30297/012 | E614A1-**2022BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30248/002 | E614-**2112 | E614 | F | N | S3 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30306/005 | E614A1-**2215BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30250/001 | E614-**2311 | E614 | F | N | S3 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30289/009 | E614A1-**2319BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30250/002 | E614-**2312 | E614 | F | N | S3 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30288/016 | E614A1-**2326BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30252/001 | E614-**2511 | E614 | F | N | S3 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30296/007 | E614A1-**2517BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30254/001 | E614-**2711 | E614 | F | N | S3 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30291/015 | E614A1-**2725BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 | | ZM1-30255/001 | E614-**2811 | E614 | F | N | S3 |

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|-----------|----------|----------|---|----|-----|
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |
| ZM0-30067 | 1Z1064A1 | 1Z1064A1 | F | A1 | S10 |

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|---------------|------------------|---------------|---|----|-----|
| ZM1-30290/005 | E614A1-**2815BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM1-30256/001 | E614-**2911 | E614 | F | N | S3 |
| ZM1-30291/001 | E614A1-**2911BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM1-30259/001 | E614-**3211 | E614 | F | N | S3 |
| ZM1-30291/010 | E614A1-**3220BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM1-30261/001 | E614-**3411 | E614 | F | N | S3 |
| ZM1-30300/004 | E614A1-**3414BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM1-30262/001 | E614-**3511 | E614 | F | N | S3 |
| ZM1-30296/004 | E614A1-**3514BC1 | 1Z1064A1xE614 | F | A1 | BC1 |
| ZM1-30263/001 | E614-**3611 | E614 | F | N | S3 |

Table 3: R-Lines with a cold tolerance and interesting biomass traits

| IDT | GENOTYPE | DER | POOL | PLASMA | GENER |
|---------------|------------|-----------------------|------|--------|-------|
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30217/001 | 3Z60170-11 | IS 30441B x IS 29409B | M | N | S1 |
| ZC1-30218/001 | 3Z60171-11 | IS 30441B x KELLER | M | N | S1 |
| ZC1-30218/001 | 3Z60171-11 | IS 30441B x KELLER | M | N | S1 |
| ZC1-30218/001 | 3Z60171-11 | IS 30441B x KELLER | M | N | S1 |
| ZC1-30218/001 | 3Z60171-11 | IS 30441B x KELLER | M | N | S1 |
| ZC1-30218/001 | 3Z60171-11 | IS 30441B x KELLER | M | N | S1 |

| IDT | GENOTYPE | DER | POOL | PLASMA | GENER |
|---------------|--------------|-----------------------|------|--------|-------|
| ZM1-56014/002 | 3Z60170-1130 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56014/003 | 3Z60170-1131 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56015/001 | 3Z60170-1135 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56015/002 | 3Z60170-1136 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56015/004 | 3Z60170-1138 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56016/001 | 3Z60170-1141 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56016/002 | 3Z60170-1142 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56016/003 | 3Z60170-1143 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56017/001 | 3Z60170-1147 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56017/002 | 3Z60170-1148 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56017/003 | 3Z60170-1149 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56018/001 | 3Z60170-1153 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56018/002 | 3Z60170-1154 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56018/003 | 3Z60170-1155 | IS 30441B x IS 29409B | M | N | S2 |
| ZM1-56019/001 | 3Z60170-1159 | IS 30441B x IS 29409B | M | N | S2 |

