



Zea mays Axis1 - Assembly

Clément Birbes Christophe Klopp Claire Kuchly









Amaizing – Assembly production

- 25 Maize :

- 23 Sequenced
- 23 Assembled and scaffolded
- 15 Available assemblies

- Problems encountered :

- Resources needed for scaffolding
- RagTag struggles in telomeric areas
- Mitochondria and chloroplasts are not scaffolded







Seq**O**ccIn

Rebasecalling nanopore

	F2				F4			
	original	%	rebasecall	%	original	%	rebasecall	%
Total <u>reads</u>	2 998 334		2 998 326		15 972 729		14 395 282	
Reads mapped	2 605 045	87	2 684 131	90	13 517 315	85	12 576 475	87
Unmapped	393 289	13	314 195	10	2 455 414	15	1 818 807	13
Reads total length	54 124 161 572		55 269 005 540		202 945 366 984		185 205 782 426	
Bases mapped	51 240 577 547	95	53 010 921 912	96	187 737 313 806	93	174 677 375 407	94
Mismatches	8 710 680 341	16	6 142 810 812	11	32 111 337 408	16	23 180 990 715	13

- Less reads, filtered by guppy
- Better alignment
- Less mismatches



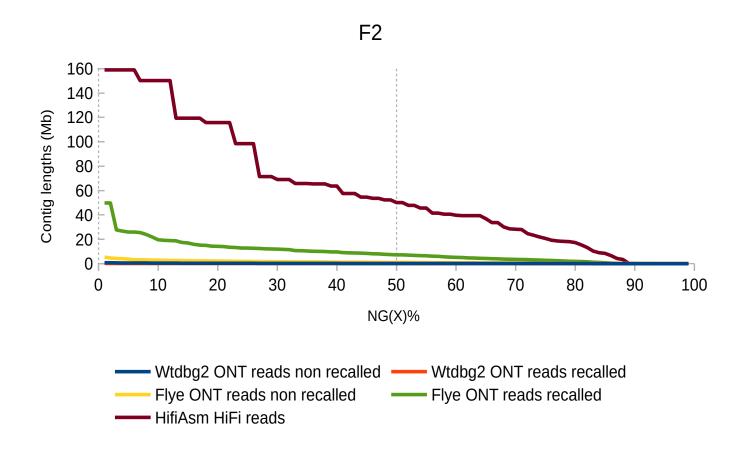






Rebasecalling - F2 Flye Assembly











Seqoccin Q20+ Assembly (Tests on Bos_taurus)

*
X
*

	Flye Q20+	Hifiasm Q20+	Flye CLR	Wtdbg2 CLR	Flye ONT	Wtdbg2 ONT	Flye Hifi	Hifiasm HiFi
Coverage	30X	30X	33X	33X	58X	58X	41X	41X
Number of scaffolds	2 398	17150	3 466	2 857	2 744	7 226	18159	905
Total size (Gb)	2.70	2.22	2.66	2.63	2.68	2.70	3.44	3.21
Longest contig (Mb)	76.9	4.8	70.5	56.6	95.23	70.7	11.5	167.7
N50 scaffold length (Mb)	28.5	0.17	19.6	16.5	31.4	23.7	0.75	86.9
L50 scaffold count	30	3570	38	46	26	35	948	15
BUSCO	95.8%	56.9%	95.0%	90.0%	85.7%	70.2%	93.5%	96.0%

- Q20+ hifiasm : No good results so far

- Q20+ flye: Results as good as CLR flye + correction CLR

ONT flye + correction short reads

- Q20+: Good consensus sequences quality with flye (HiFi equivalent) Missing repeated parts (ONT / CLR equivalent)









Partenaires du projet



Coordination

Cécile Donnadieu **Christine Gaspin** Carole lampietro Denis Milan

















APIS-GENE

















TOULOUSE















Axe1 Génomique

Clément Birbes Arnaud Di-Franco Andreea Dréau Camille Fché **Thomas Faraut** Carole lampietro Christophe Klopp Claire Kuchly Camille Marcuzzo **Amandine Suin** Matthias Zvtnicki

Axe2 Epigénétique

Remy Félix Serres **Paul Terzian** Celine Vandecasteele Christophe Klopp

Axe3 Métagénomique

Adrien Castinel Jean Mainguy Olivier Bouchez Géraldine Pascal Claire Hoede

Axe 4 Transversal

Amandine Broha Abdias-Archimede Towe-Patipe Erwan Denis Romain Therville Didier Laborie Céline Noirot Gérald Salin Marie-Stéphane Trotard

GenPhySE

Cédric Cabau **Sylvie Combes Patrice Dehais Thomas Faraut** Katia Feve Nathalie Iannucelli Sophie Leroux Géraldine Pascal Frédérique Pitel

Julie Demars

MIAT

Matthias Zytnicki Cécile Grohs

GABI

Didier Boichard Mekki Boussaha Sébastien Fritz

Le Moulon

Alain Charcosset Johann Joets Delphine Madur Stéphane Nicolas Rémi Séraphin Clémentine Vitte









X Créalim



























