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VERSION DU 01/01/2019

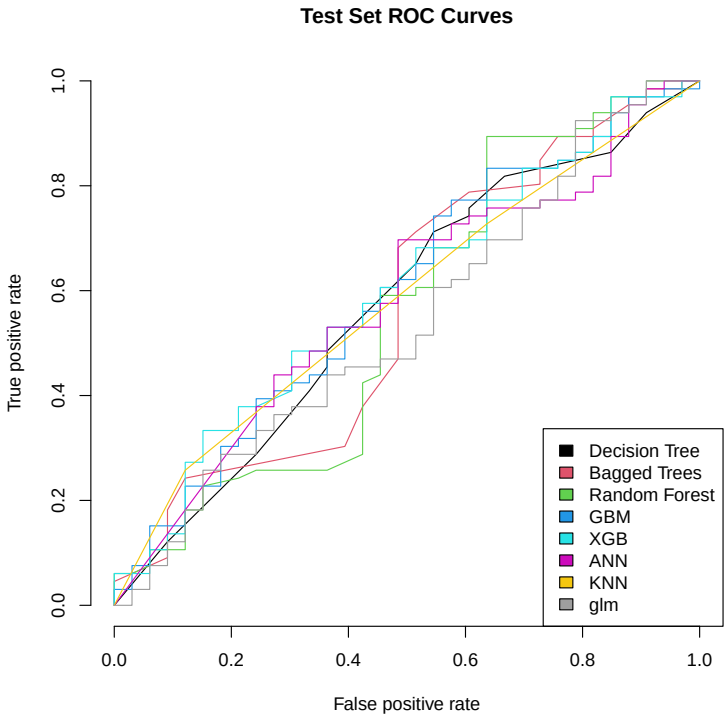
Chapitre 1

Les Fines Classification

1.1 Fines Jointure SDP Mean entre deux SDP

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x0000015233345ea8>
```

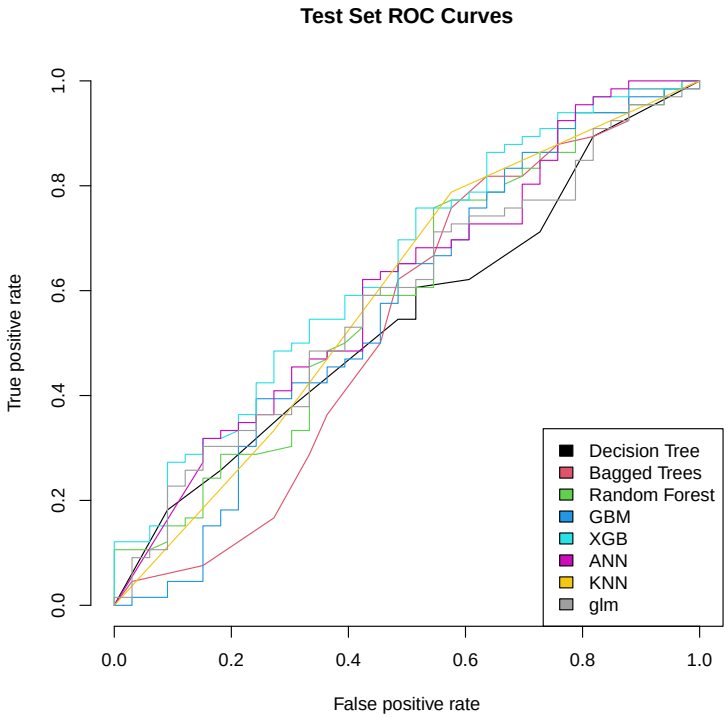
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.58	0.89	0.63	0.83
2	Bagged Trees	0.57	1.00	0.66	1.00
3	Random Forest	0.56	1.00	0.68	1.00
4	GBM	0.60	1.00	0.67	0.96
5	XGB	0.60	1.00	0.60	1.00
6	ANN	0.58	0.97	0.63	0.97
7	Knn	0.55	0.72	0.61	0.75
8	glm	0.54	0.73	0.68	0.72
9	Moyenne totale	0.57	0.91	0.64	0.90



1.2 Fines Jointure SDP Max entre deux SDP

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x0000015233504890>
```

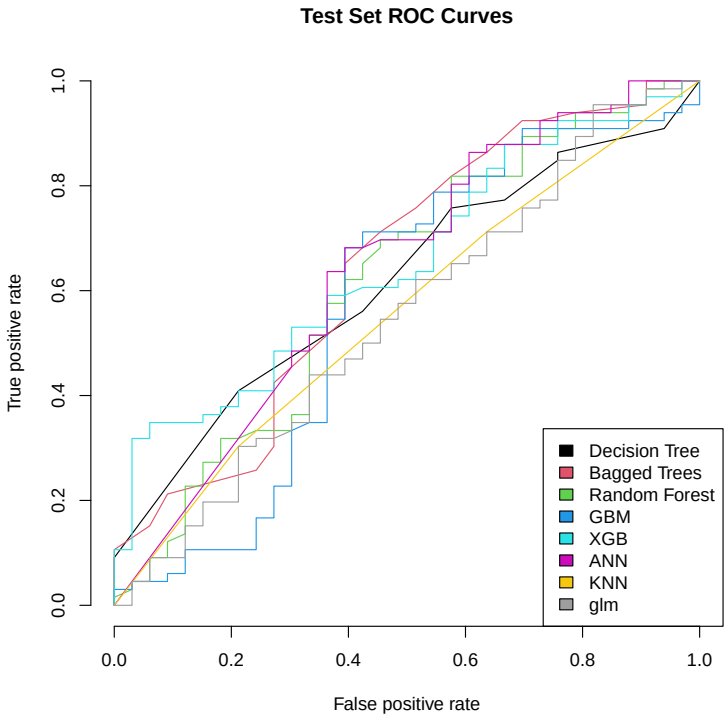
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.55	0.82	0.53	0.79
2	Bagged Trees	0.54	0.99	0.66	0.99
3	Random Forest	0.59	1.00	0.66	1.00
4	GBM	0.57	0.99	0.65	0.94
5	XGB	0.65	1.00	0.66	1.00
6	ANN	0.61	0.94	0.58	0.97
7	Knn	0.61	0.68	0.67	0.71
8	glm	0.58	0.70	0.68	0.67
9	Moyenne totale	0.59	0.89	0.63	0.88



1.3 Fines Jointure SDP Median entre deux SDP

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x0000015235a6cb48>
```

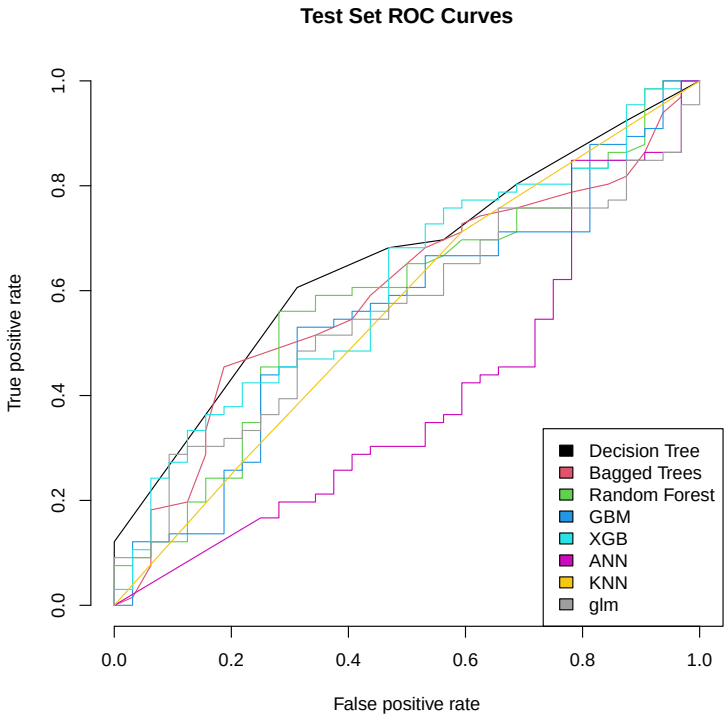
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.62	0.82	0.63	0.80
2	Bagged Trees	0.65	1.00	0.69	0.99
3	Random Forest	0.62	1.00	0.68	0.99
4	GBM	0.58	0.99	0.66	0.93
5	XGB	0.65	1.00	0.64	1.00
6	ANN	0.64	0.94	0.62	0.97
7	Knn	0.55	0.73	0.60	0.76
8	glm	0.55	0.71	0.69	0.70
9	Moyenne totale	0.61	0.90	0.65	0.89



1.4 Fines Jointure SDP Mean 60 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x00000152325d45b8>
```

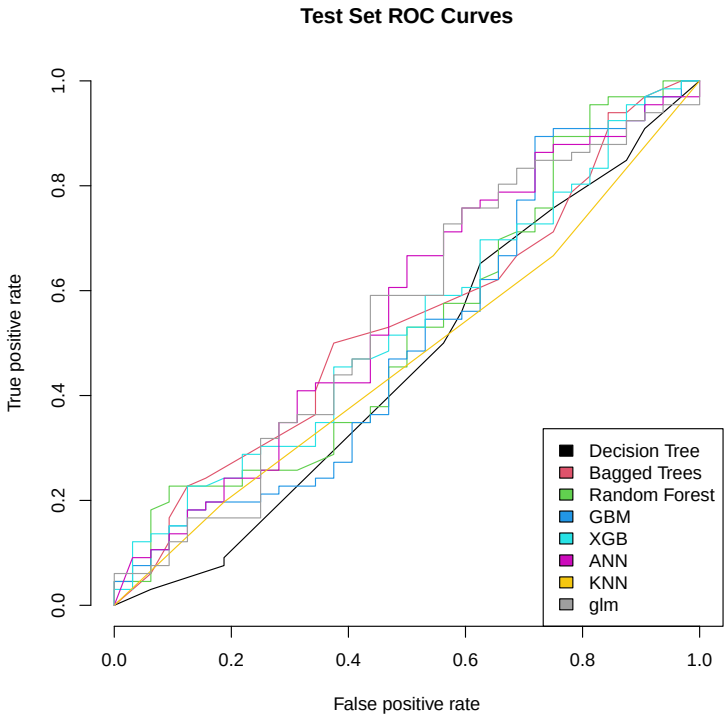
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.65	0.81	0.63	0.80
2	Bagged Trees	0.60	1.00	0.62	0.98
3	Random Forest	0.59	1.00	0.59	0.99
4	GBM	0.56	0.99	0.57	0.95
5	XGB	0.61	1.00	0.61	1.00
6	ANN	0.40	0.96	0.45	0.97
7	Knn	0.59	0.70	0.64	0.73
8	glm	0.56	0.75	0.58	0.71
9	Moyenne totale	0.57	0.90	0.59	0.89



1.5 Fines Jointure SDP Max 60 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x0000015234518490>
```

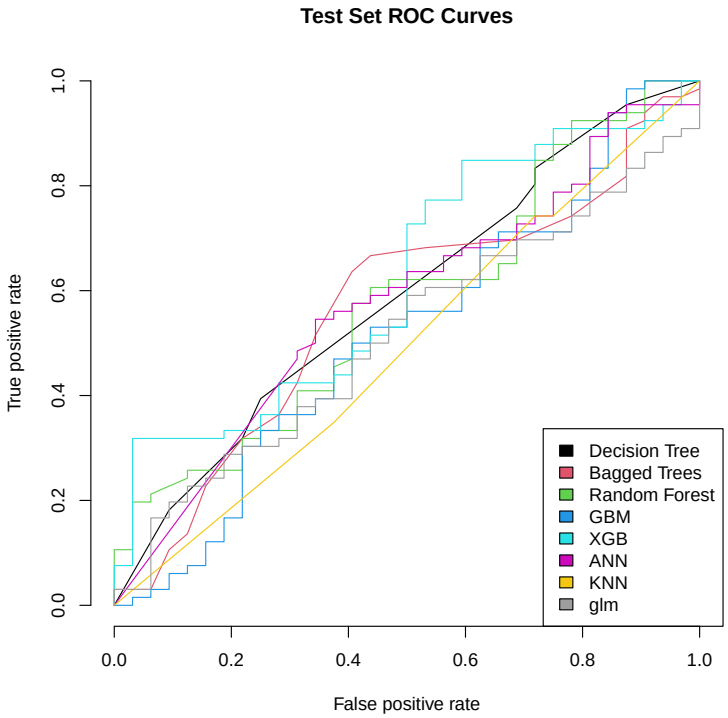
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.46	0.82	0.56	0.81
2	Bagged Trees	0.54	1.00	0.55	0.97
3	Random Forest	0.52	1.00	0.59	0.99
4	GBM	0.50	1.00	0.62	0.96
5	XGB	0.53	1.00	0.57	0.99
6	ANN	0.56	0.99	0.63	0.98
7	Knn	0.54	0.72	0.58	0.75
8	glm	0.55	0.75	0.64	0.74
9	Moyenne totale	0.53	0.91	0.59	0.90



1.6 Fines Jointure SDP Median 60 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x0000015232f74400>
```

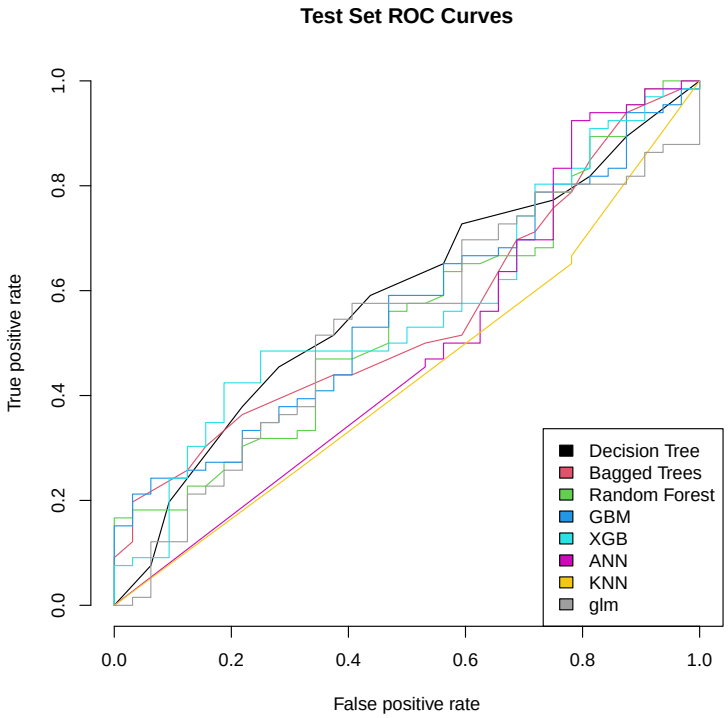
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.59	0.82	0.63	0.80
2	Bagged Trees	0.57	1.00	0.57	0.98
3	Random Forest	0.58	1.00	0.54	0.99
4	GBM	0.52	0.99	0.58	0.94
5	XGB	0.62	1.00	0.66	1.00
6	ANN	0.58	0.96	0.59	0.97
7	Knn	0.53	0.73	0.60	0.76
8	glm	0.51	0.75	0.57	0.73
9	Moyenne totale	0.56	0.91	0.59	0.90



1.7 Fines Jointure SDP Mean 10 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x0000015235c9c618>
```

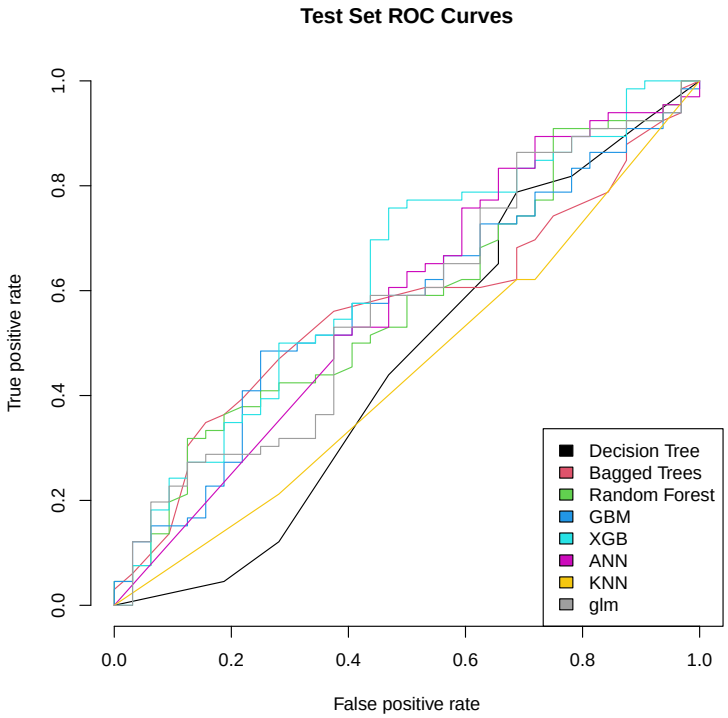
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.59	0.88	0.58	0.83
2	Bagged Trees	0.55	1.00	0.57	0.98
3	Random Forest	0.55	1.00	0.57	0.99
4	GBM	0.56	1.00	0.56	0.96
5	XGB	0.57	1.00	0.51	0.99
6	ANN	0.48	0.95	0.55	0.96
7	Knn	0.58	0.75	0.61	0.78
8	glm	0.54	0.72	0.59	0.71
9	Moyenne totale	0.55	0.91	0.57	0.90



1.8 Fines Jointure SDP Max 10 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x00000152353d9ae0>
```

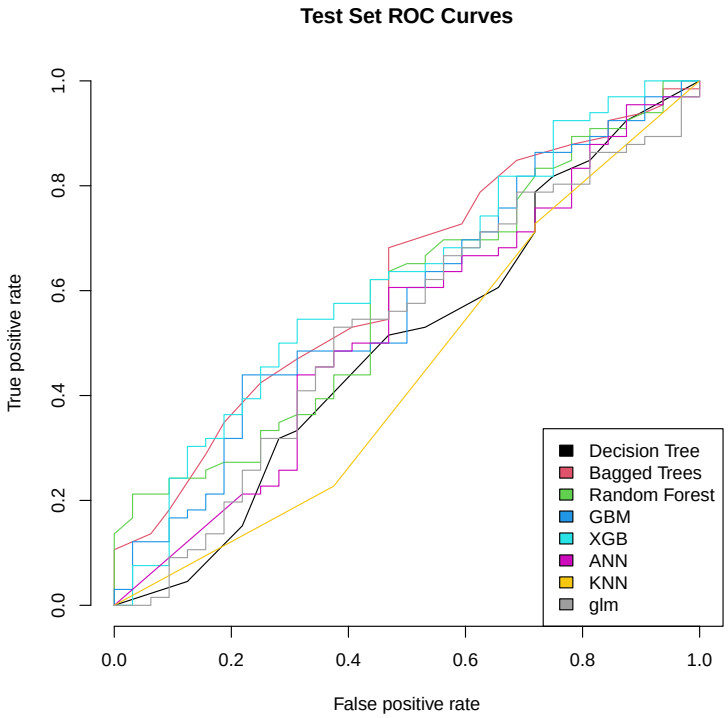
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.46	0.86	0.55	0.79
2	Bagged Trees	0.57	1.00	0.52	0.98
3	Random Forest	0.57	1.00	0.54	0.99
4	GBM	0.58	1.00	0.60	0.96
5	XGB	0.63	1.00	0.65	0.99
6	ANN	0.58	0.96	0.58	0.96
7	Knn	0.63	0.76	0.64	0.77
8	glm	0.57	0.74	0.61	0.75
9	Moyenne totale	0.57	0.91	0.59	0.90



1.9 Fines Jointure SDP Median 10 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x000001523419e1b8>
```

	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.50	0.86	0.52	0.80
2	Bagged Trees	0.62	1.00	0.62	0.99
3	Random Forest	0.58	1.00	0.60	0.99
4	GBM	0.58	0.99	0.59	0.96
5	XGB	0.62	1.00	0.60	0.99
6	ANN	0.53	0.98	0.51	0.98
7	Knn	0.60	0.69	0.66	0.72
8	glm	0.53	0.72	0.61	0.71
9	Moyenne totale	0.57	0.91	0.59	0.89



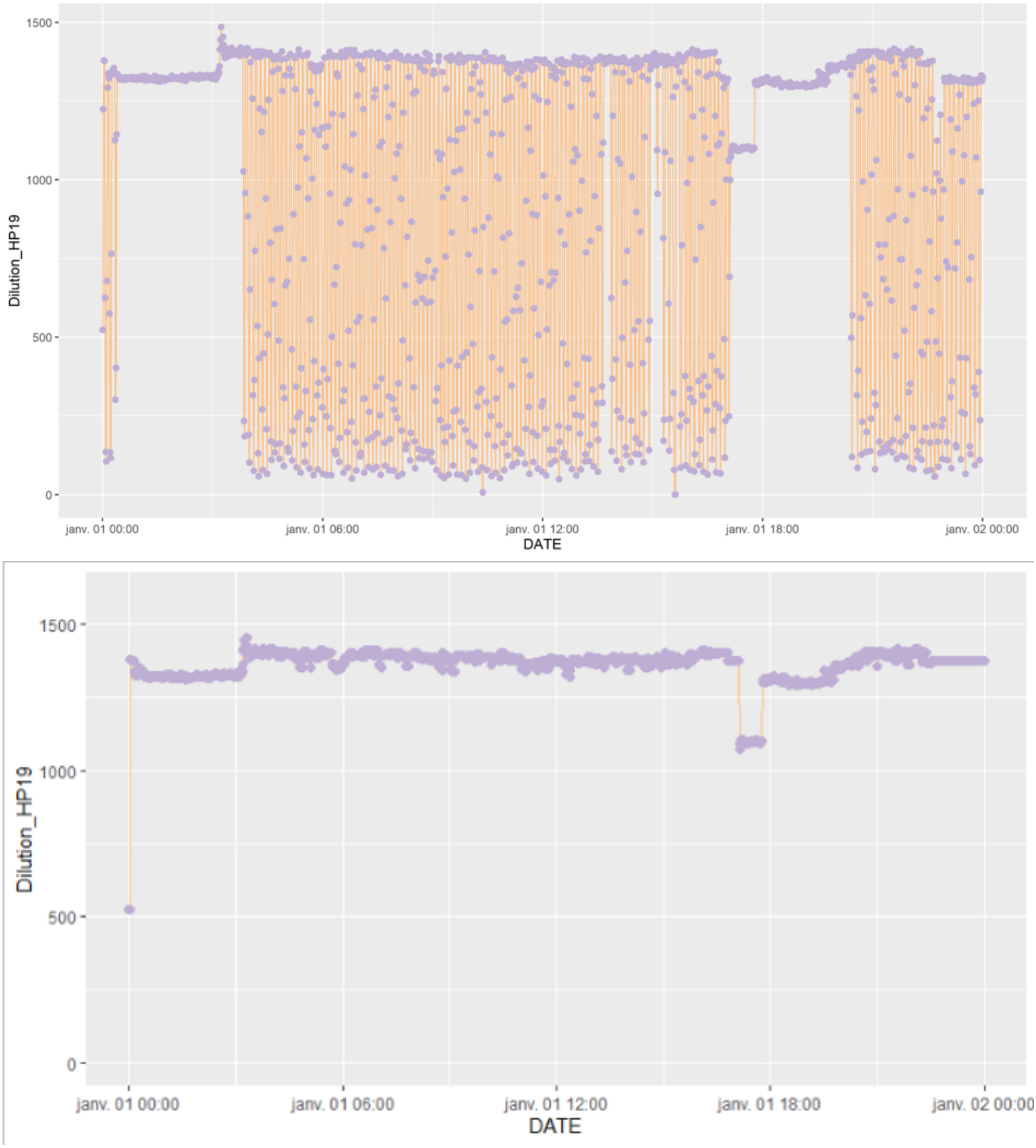
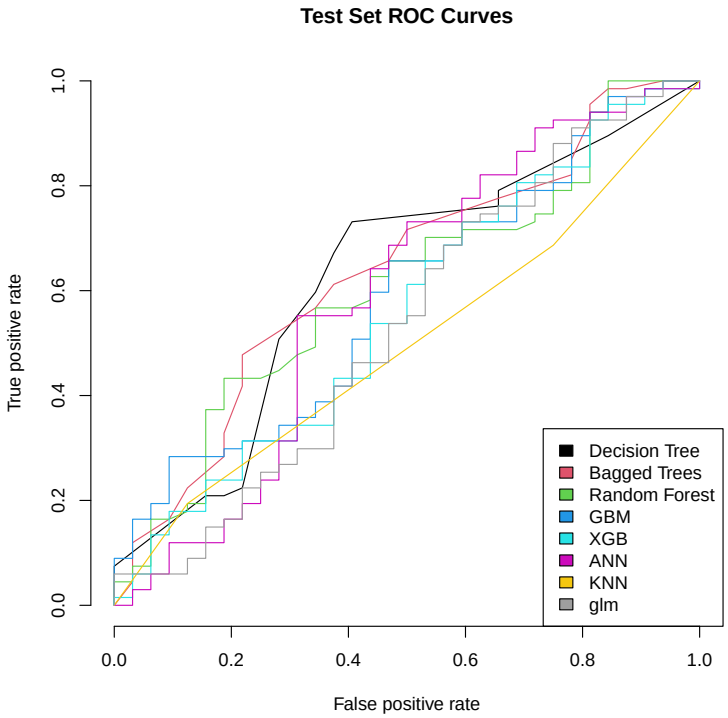


FIGURE 1.1 – Correction de la dilution du hopper 19

1.10 Fines Jointure SDP Mean entre deux SDP

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015236d19148>
```

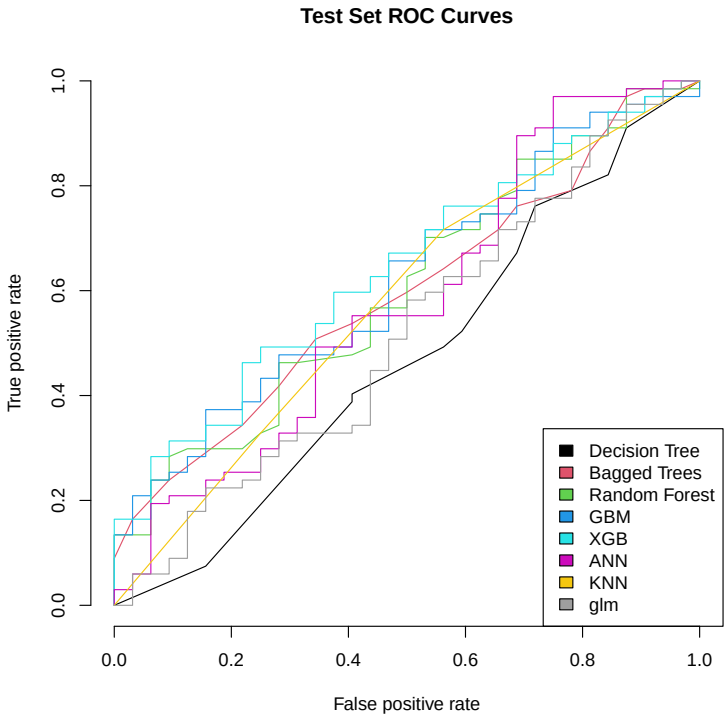
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.63	0.86	0.63	0.82
2	Bagged Trees	0.64	1.00	0.65	0.99
3	Random Forest	0.61	1.00	0.61	1.00
4	GBM	0.59	1.00	0.63	0.97
5	XGB	0.56	1.00	0.63	1.00
6	ANN	0.59	0.96	0.67	0.98
7	Knn	0.58	0.71	0.61	0.75
8	glm	0.54	0.71	0.67	0.72
9	Moyenne totale	0.59	0.90	0.63	0.90



1.11 Fines Jointure SDP Max entre deux SDP

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015236439850>
```

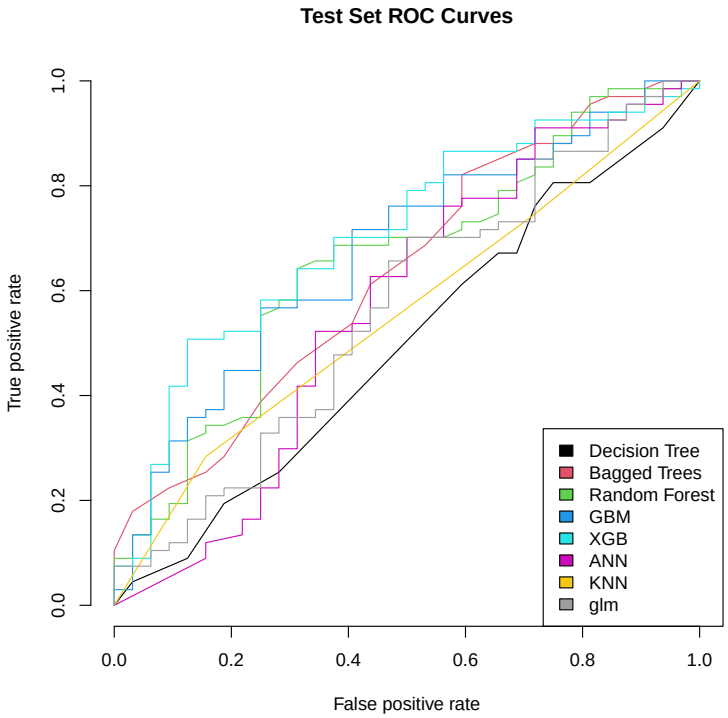
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.47	0.80	0.56	0.78
2	Bagged Trees	0.60	1.00	0.60	1.00
3	Random Forest	0.60	1.00	0.65	1.00
4	GBM	0.62	1.00	0.65	0.96
5	XGB	0.64	1.00	0.65	1.00
6	ANN	0.58	0.98	0.55	0.99
7	Knn	0.68	0.76	0.72	0.79
8	glm	0.52	0.69	0.68	0.68
9	Moyenne totale	0.59	0.90	0.63	0.90



1.12 Fines Jointure SDP Median entre deux SDP

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015236c7dc18>
```

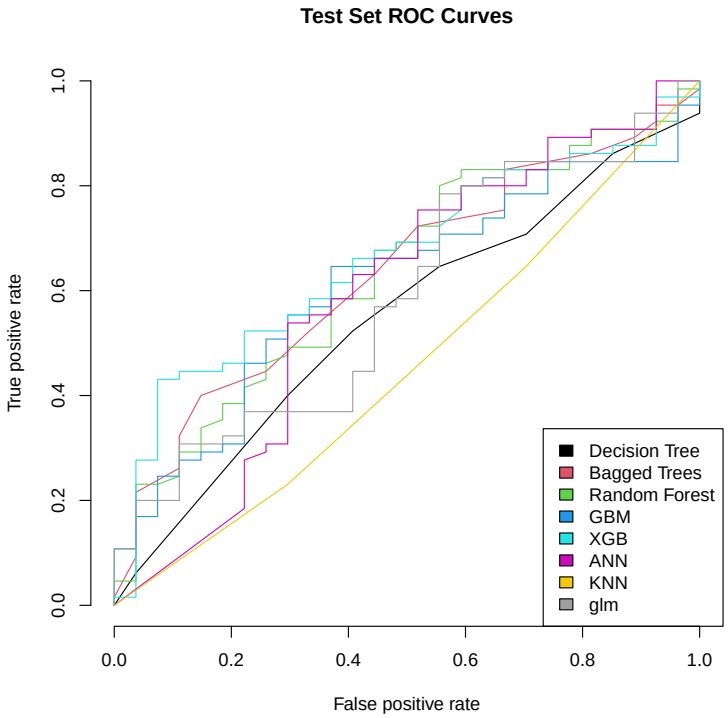
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.50	0.85	0.56	0.82
2	Bagged Trees	0.63	1.00	0.69	0.99
3	Random Forest	0.65	1.00	0.67	1.00
4	GBM	0.67	0.99	0.67	0.96
5	XGB	0.71	1.00	0.66	1.00
6	ANN	0.57	0.97	0.66	0.99
7	Knn	0.59	0.72	0.65	0.76
8	glm	0.57	0.72	0.68	0.73
9	Moyenne totale	0.61	0.91	0.65	0.90



1.13 Fines Jointure SDP Mean 60 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015234742908>
```

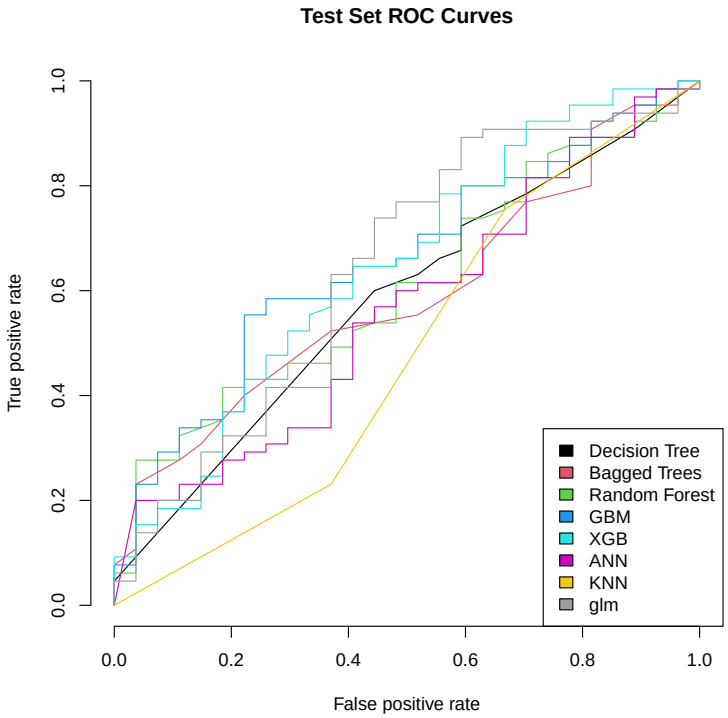
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.55	0.82	0.59	0.79
2	Bagged Trees	0.63	1.00	0.63	1.00
3	Random Forest	0.64	1.00	0.68	1.00
4	GBM	0.61	1.00	0.64	0.97
5	XGB	0.66	1.00	0.65	0.99
6	ANN	0.59	0.92	0.70	0.96
7	Knn	0.60	0.72	0.66	0.75
8	glm	0.59	0.71	0.67	0.71
9	Moyenne totale	0.61	0.90	0.65	0.90



1.14 Fines Jointure SDP Max 60 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x00000152363dfd38>
```

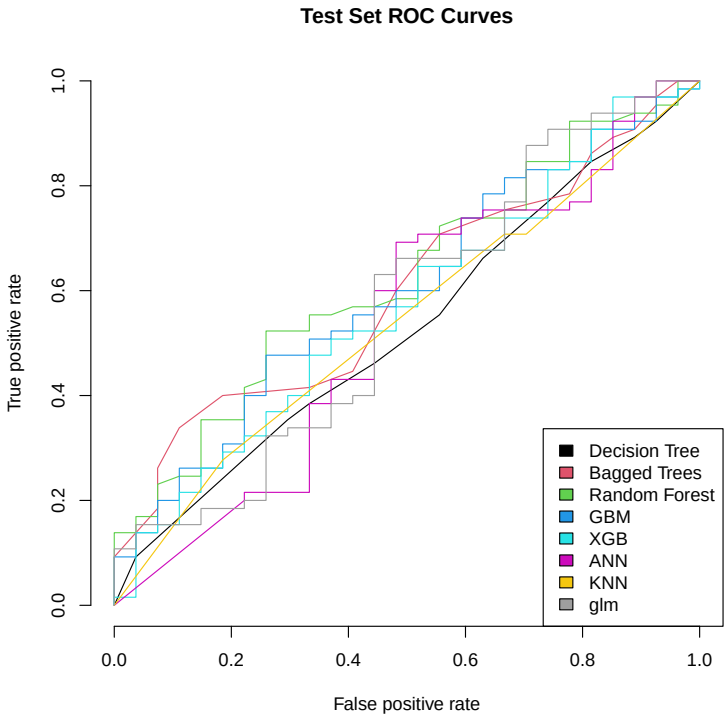
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.58	0.80	0.60	0.77
2	Bagged Trees	0.59	1.00	0.59	1.00
3	Random Forest	0.61	1.00	0.68	1.00
4	GBM	0.66	1.00	0.66	0.95
5	XGB	0.65	1.00	0.67	0.99
6	ANN	0.56	0.94	0.57	0.97
7	Knn	0.52	0.72	0.60	0.75
8	glm	0.64	0.70	0.71	0.68
9	Moyenne totale	0.60	0.89	0.63	0.89



1.15 Fines Jointure SDP Median 60 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015235acd640>
```

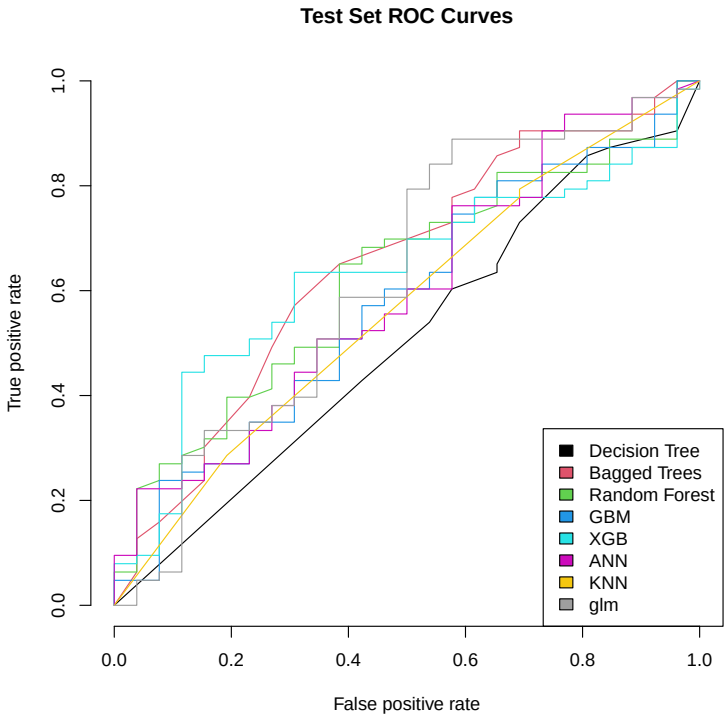
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.53	0.85	0.52	0.81
2	Bagged Trees	0.60	1.00	0.63	0.99
3	Random Forest	0.62	1.00	0.65	1.00
4	GBM	0.60	1.00	0.67	0.96
5	XGB	0.57	1.00	0.62	0.99
6	ANN	0.54	0.96	0.64	0.98
7	Knn	0.54	0.75	0.60	0.78
8	glm	0.56	0.70	0.71	0.71
9	Moyenne totale	0.57	0.91	0.63	0.90



1.16 Fines Jointure SDP Mean 10 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x00000152324918f8>
```

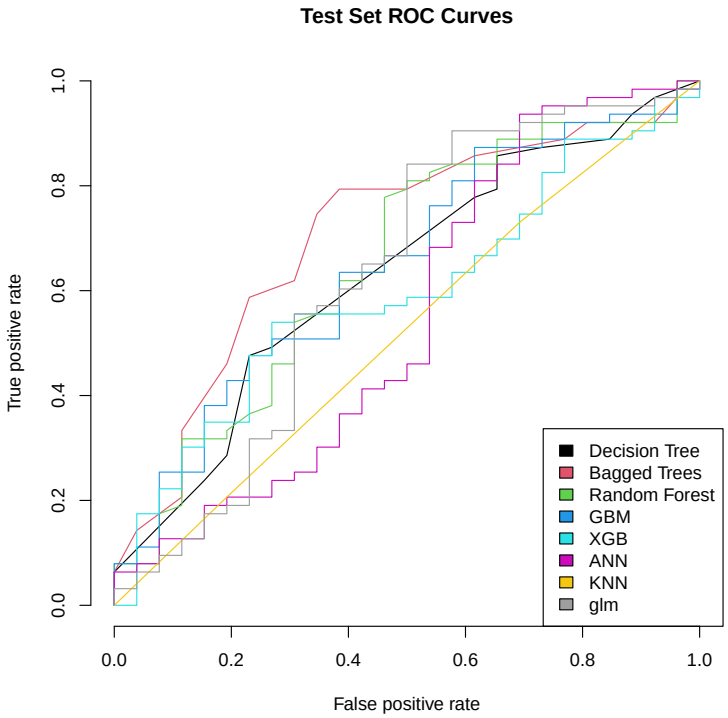
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.51	0.84	0.61	0.79
2	Bagged Trees	0.65	1.00	0.67	1.00
3	Random Forest	0.62	1.00	0.64	1.00
4	GBM	0.58	1.00	0.66	0.96
5	XGB	0.63	1.00	0.63	1.00
6	ANN	0.60	0.95	0.58	0.98
7	Knn	0.62	0.70	0.67	0.75
8	glm	0.62	0.69	0.72	0.72
9	Moyenne totale	0.60	0.90	0.65	0.90



1.17 Fines Jointure SDP Max 10 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x00000152335e5e40>
```

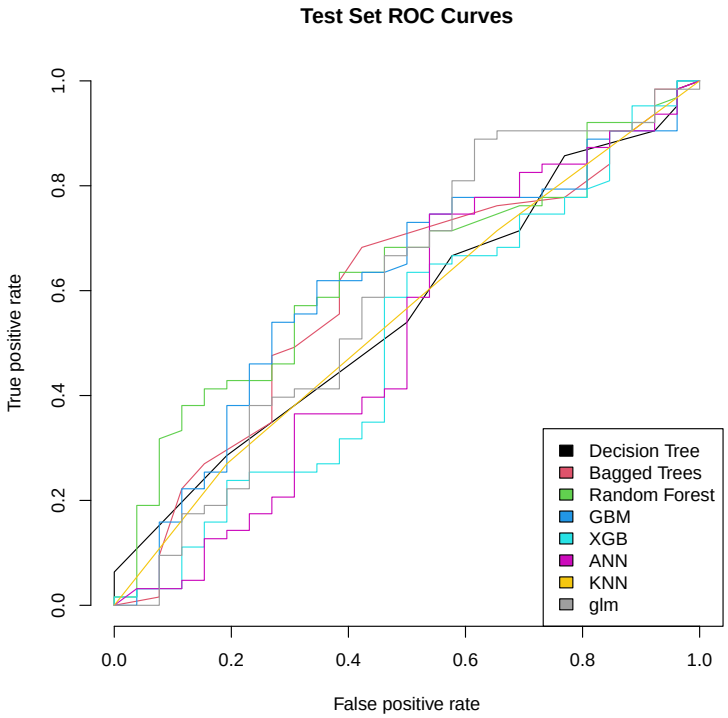
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.63	0.86	0.66	0.82
2	Bagged Trees	0.71	1.00	0.72	0.99
3	Random Forest	0.65	1.00	0.73	1.00
4	GBM	0.65	1.00	0.70	0.97
5	XGB	0.59	1.00	0.65	1.00
6	ANN	0.55	0.97	0.49	0.98
7	Knn	0.57	0.75	0.60	0.79
8	glm	0.63	0.69	0.74	0.71
9	Moyenne totale	0.62	0.91	0.66	0.91



1.18 Fines Jointure SDP Median 10 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x000001522b0757f8>
```

	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.56	0.83	0.60	0.81
2	Bagged Trees	0.60	1.00	0.62	1.00
3	Random Forest	0.63	1.00	0.62	1.00
4	GBM	0.61	1.00	0.69	0.96
5	XGB	0.50	1.00	0.61	1.00
6	ANN	0.52	0.96	0.61	0.98
7	Knn	0.65	0.72	0.71	0.77
8	glm	0.59	0.68	0.72	0.70
9	Moyenne totale	0.58	0.90	0.64	0.90



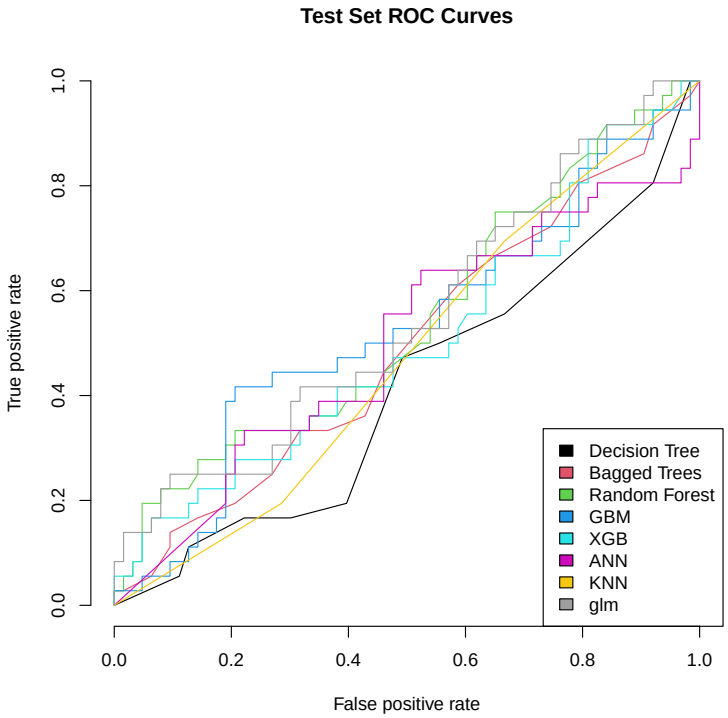
Chapitre 2

Les Gros Classification

2.1 Gros Jointure SDP Mean entre deux SDP

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x00000152370b43e0>
```

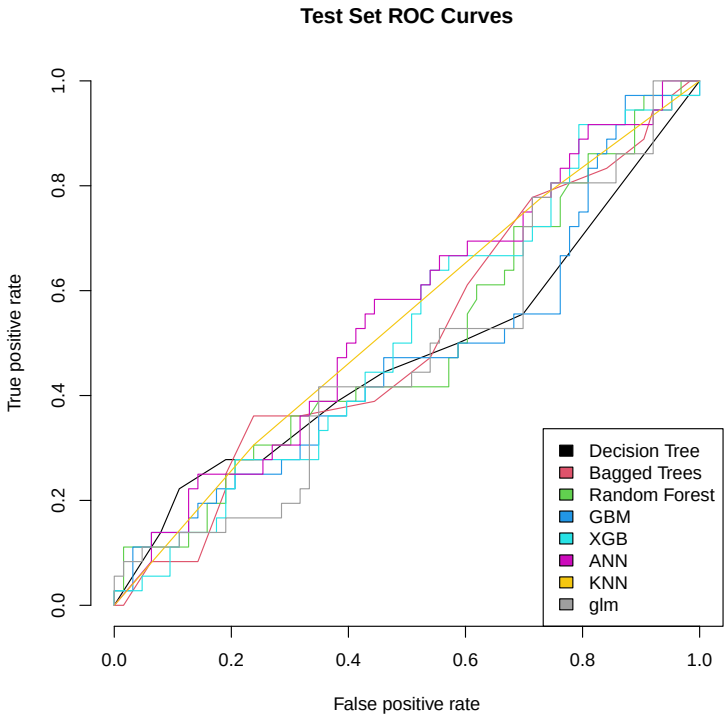
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.42	0.89	0.45	0.85
2	Bagged Trees	0.49	1.00	0.56	0.99
3	Random Forest	0.54	1.00	0.63	0.99
4	GBM	0.53	1.00	0.59	0.96
5	XGB	0.50	1.00	0.58	1.00
6	ANN	0.50	0.93	0.56	0.96
7	Knn	0.53	0.75	0.59	0.78
8	glm	0.55	0.82	0.41	0.80
9	Moyenne totale	0.51	0.92	0.54	0.92



2.2 Gros Jointure SDP Max entre deux SDP

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x000001523806a6e0>
```

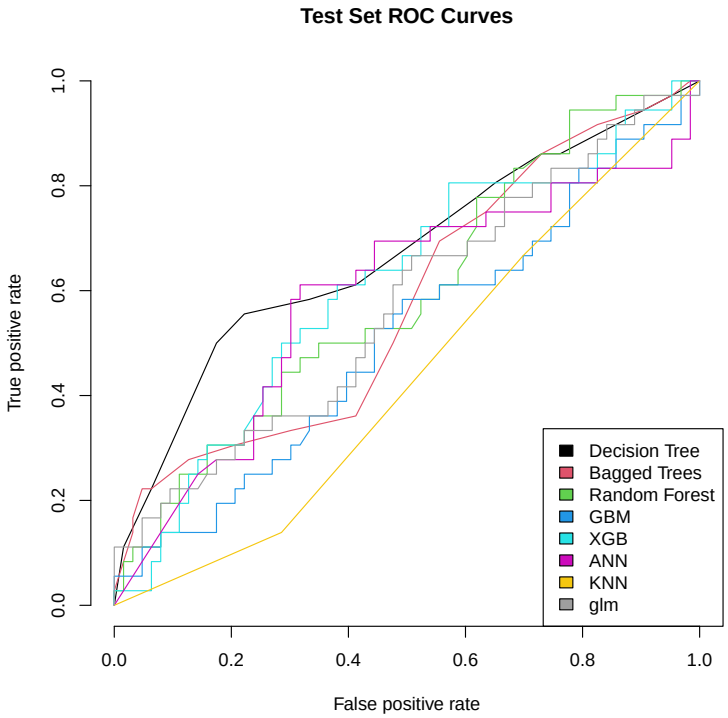
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.48	0.84	0.54	0.80
2	Bagged Trees	0.51	1.00	0.57	0.99
3	Random Forest	0.50	1.00	0.60	0.99
4	GBM	0.48	1.00	0.60	0.94
5	XGB	0.52	1.00	0.52	1.00
6	ANN	0.55	0.96	0.56	0.97
7	Knn	0.55	0.75	0.61	0.80
8	glm	0.48	0.81	0.40	0.81
9	Moyenne totale	0.51	0.92	0.55	0.91



2.3 Gros Jointure SDP Median entre deux SDP

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x000001523965fcd8>
```

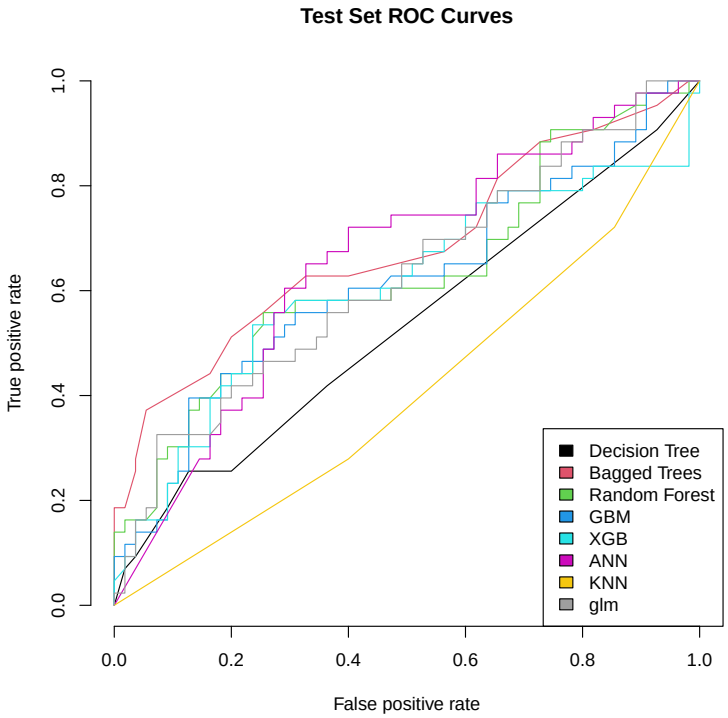
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.67	0.85	0.70	0.82
2	Bagged Trees	0.58	1.00	0.62	0.99
3	Random Forest	0.59	1.00	0.65	0.99
4	GBM	0.51	0.99	0.58	0.96
5	XGB	0.61	1.00	0.61	1.00
6	ANN	0.59	0.95	0.61	0.97
7	Knn	0.65	0.69	0.67	0.73
8	glm	0.57	0.83	0.40	0.81
9	Moyenne totale	0.60	0.91	0.60	0.91



2.4 Gros Jointure SDP Mean 60 minutes

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x00000152376155f0>
```

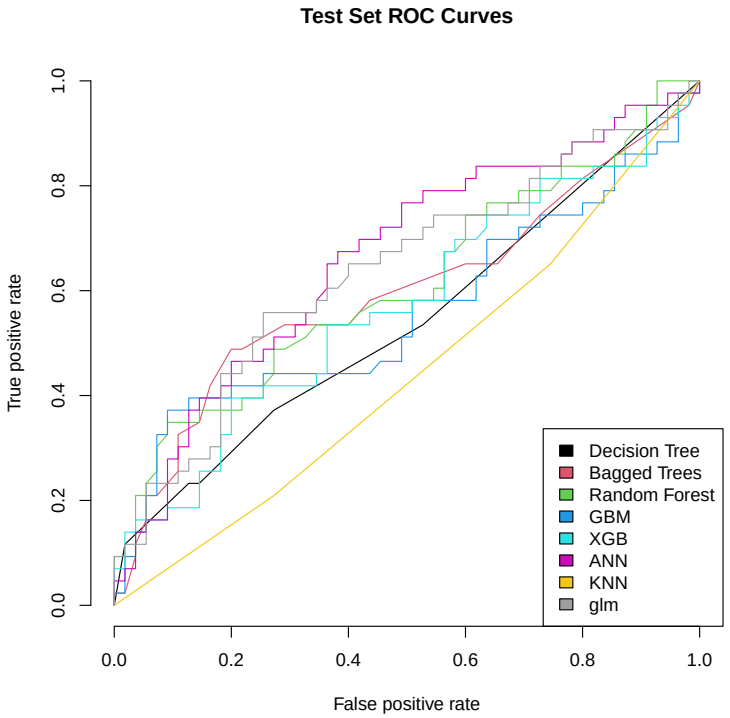
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.53	0.77	0.59	0.82
2	Bagged Trees	0.68	1.00	0.69	0.99
3	Random Forest	0.63	1.00	0.63	0.99
4	GBM	0.62	1.00	0.63	0.95
5	XGB	0.61	1.00	0.62	1.00
6	ANN	0.66	0.91	0.64	0.95
7	Knn	0.57	0.75	0.60	0.80
8	glm	0.63	0.79	0.64	0.78
9	Moyenne totale	0.62	0.90	0.63	0.91



2.5 Gros Jointure SDP Max 60 minutes

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x00000152381a3158>
```

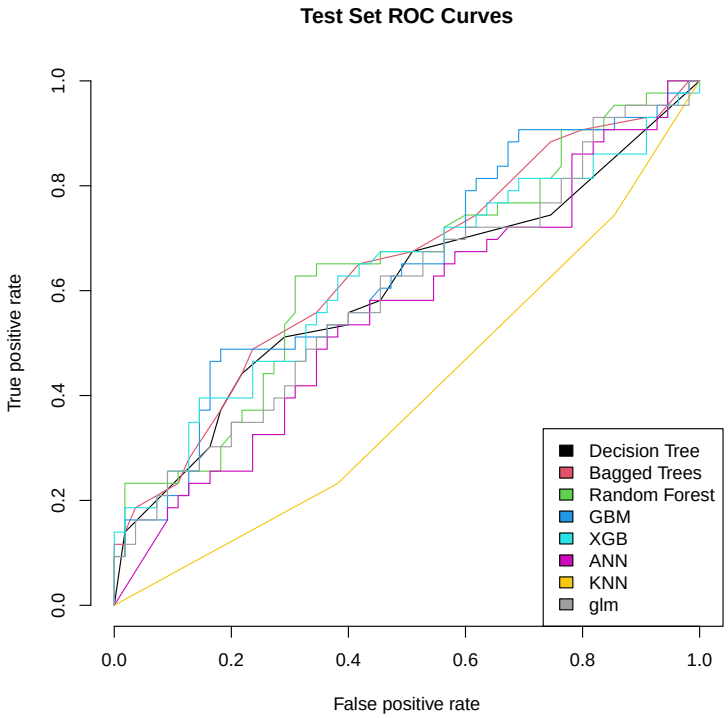
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.54	0.77	0.58	0.81
2	Bagged Trees	0.60	1.00	0.63	0.99
3	Random Forest	0.61	1.00	0.65	0.99
4	GBM	0.56	1.00	0.66	0.95
5	XGB	0.57	1.00	0.58	1.00
6	ANN	0.66	0.92	0.63	0.96
7	Knn	0.54	0.74	0.57	0.79
8	glm	0.64	0.80	0.60	0.76
9	Moyenne totale	0.59	0.90	0.61	0.91



2.6 Gros Jointure SDP Median 60 minutes

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x000001522b076f98>
```

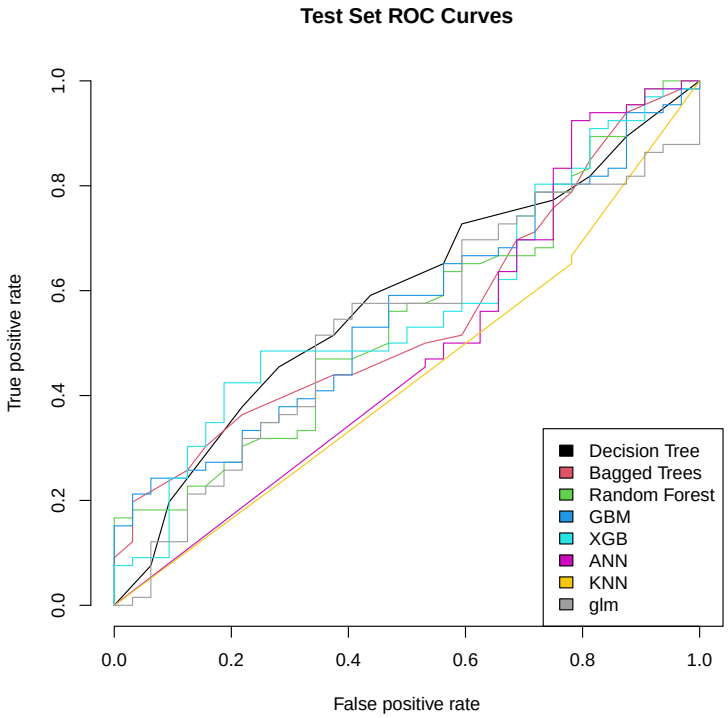
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.60	0.86	0.63	0.83
2	Bagged Trees	0.65	1.00	0.61	0.99
3	Random Forest	0.64	1.00	0.61	0.99
4	GBM	0.64	1.00	0.62	0.95
5	XGB	0.62	1.00	0.61	1.00
6	ANN	0.56	0.92	0.54	0.96
7	Knn	0.53	0.75	0.56	0.81
8	glm	0.59	0.78	0.60	0.75
9	Moyenne totale	0.60	0.91	0.60	0.91



2.7 Gros Jointure SDP Mean 10 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x0000015232bed9d0>
```

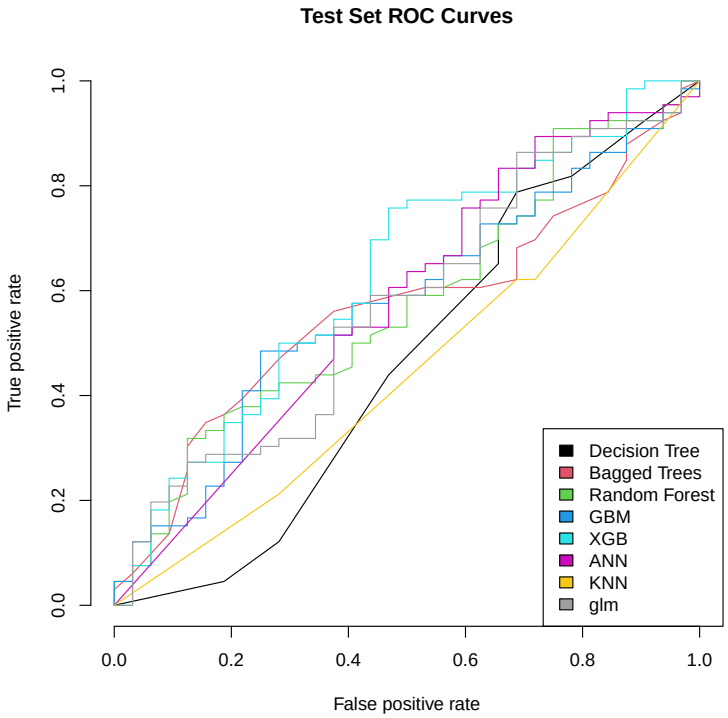
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.59	0.88	0.58	0.83
2	Bagged Trees	0.55	1.00	0.57	0.98
3	Random Forest	0.55	1.00	0.57	0.99
4	GBM	0.56	1.00	0.56	0.96
5	XGB	0.57	1.00	0.51	0.99
6	ANN	0.48	0.95	0.55	0.96
7	Knn	0.58	0.75	0.61	0.78
8	glm	0.54	0.72	0.59	0.71
9	Moyenne totale	0.55	0.91	0.57	0.90



2.8 Gros Jointure SDP Max 10 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x00000152367819a8>
```

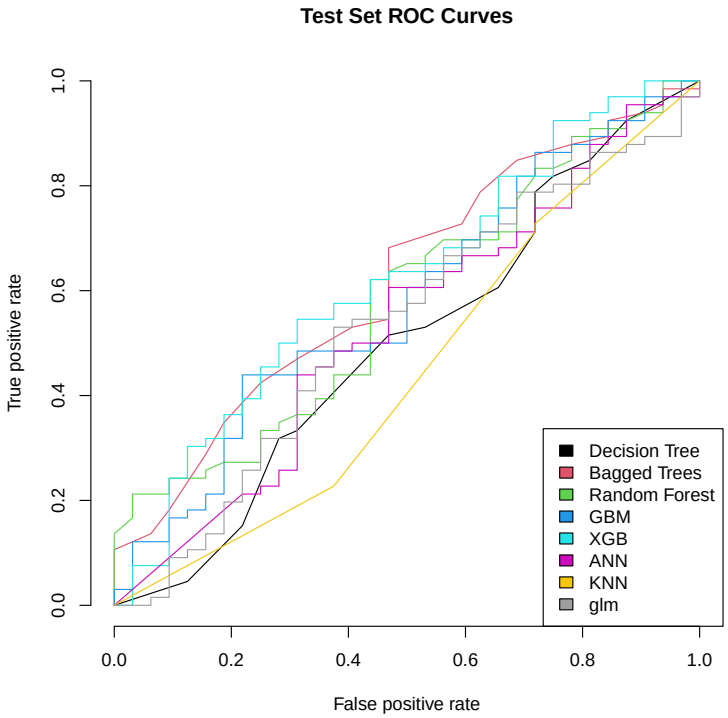
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.46	0.86	0.55	0.79
2	Bagged Trees	0.57	1.00	0.52	0.98
3	Random Forest	0.57	1.00	0.54	0.99
4	GBM	0.58	1.00	0.60	0.96
5	XGB	0.63	1.00	0.65	0.99
6	ANN	0.58	0.96	0.58	0.96
7	Knn	0.63	0.76	0.64	0.77
8	glm	0.57	0.74	0.61	0.75
9	Moyenne totale	0.57	0.91	0.59	0.90



2.9 Gros Jointure SDP Median 10 minutes

```
## X40µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + Débit_CV004 + Dilution_SB002 + Arrosage_Crible_SC003 +
##     Dilution_HP14 + Dilution_HP15 + Dilution_HP18 + Dilution_HP19 +
##     Pression_PK12 + Pression_PK13 + Pression_PK14 + Pression_PK16 +
##     Pression_PK18
## <environment: 0x00000152380585b8>
```

	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.50	0.86	0.52	0.80
2	Bagged Trees	0.62	1.00	0.62	0.99
3	Random Forest	0.58	1.00	0.60	0.99
4	GBM	0.58	0.99	0.59	0.96
5	XGB	0.62	1.00	0.60	0.99
6	ANN	0.53	0.98	0.51	0.98
7	Knn	0.60	0.69	0.66	0.72
8	glm	0.53	0.72	0.61	0.71
9	Moyenne totale	0.57	0.91	0.59	0.89



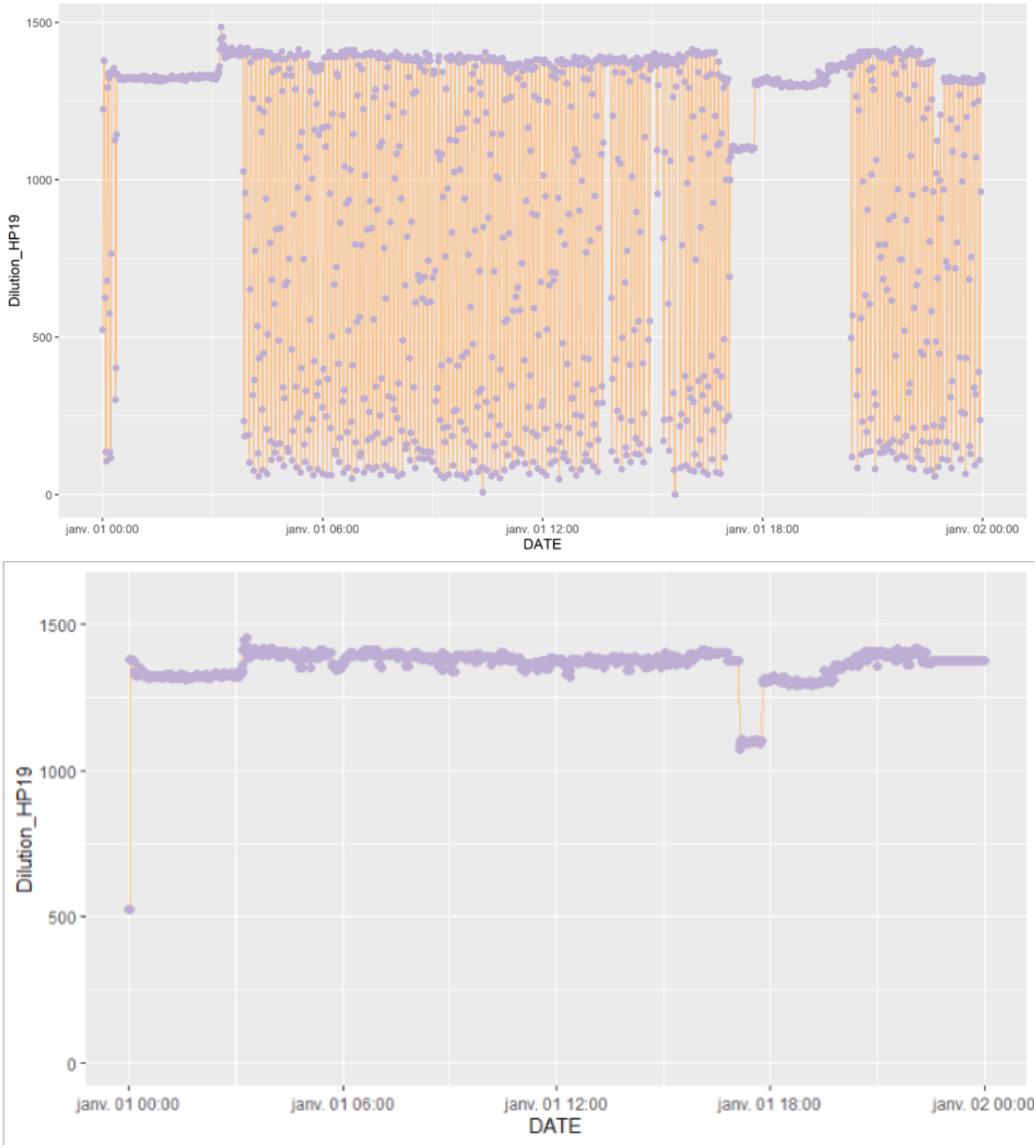
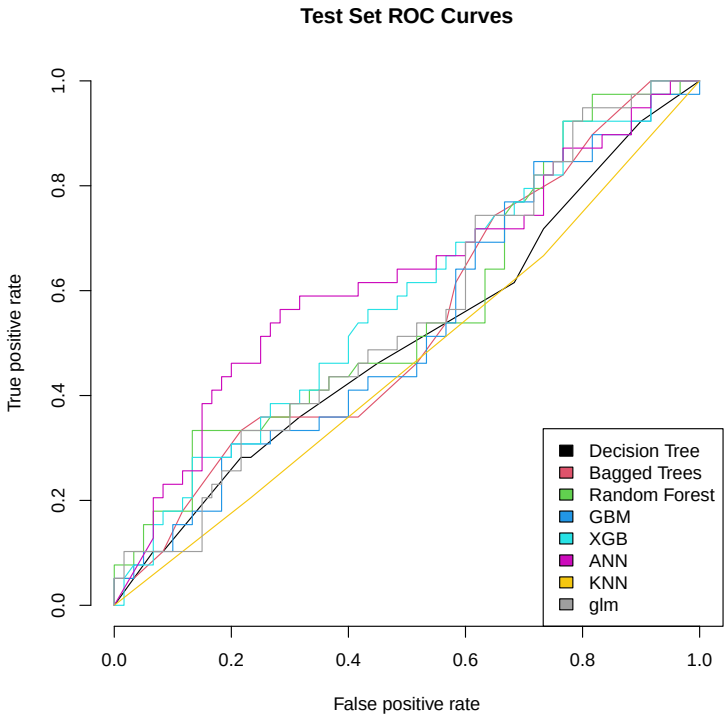


FIGURE 2.1 – Correction de la dilution du hopper 19

2.10 Gros Jointure SDP Mean entre deux SDP

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015234003140>
```

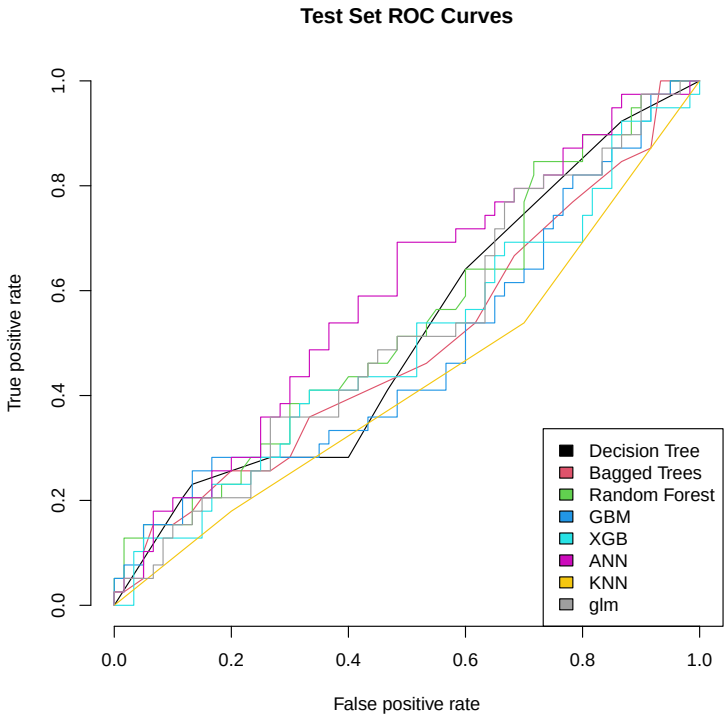
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.51	0.87	0.56	0.84
2	Bagged Trees	0.54	1.00	0.60	1.00
3	Random Forest	0.56	1.00	0.66	0.99
4	GBM	0.53	1.00	0.59	0.96
5	XGB	0.58	1.00	0.59	1.00
6	ANN	0.62	0.97	0.66	0.98
7	Knn	0.49	0.73	0.55	0.78
8	glm	0.55	0.82	0.43	0.81
9	Moyenne totale	0.55	0.92	0.58	0.92



2.11 Gros Jointure SDP Max entre deux SDP

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015239078ab0>
```

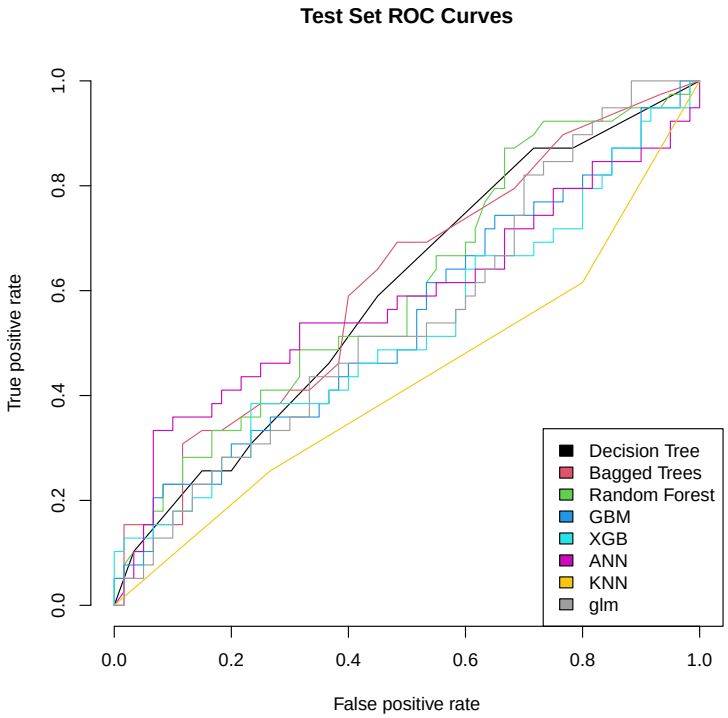
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.52	0.84	0.56	0.82
2	Bagged Trees	0.49	1.00	0.55	1.00
3	Random Forest	0.54	1.00	0.58	0.99
4	GBM	0.49	1.00	0.62	0.94
5	XGB	0.50	1.00	0.56	1.00
6	ANN	0.59	1.00	0.58	1.00
7	Knn	0.58	0.73	0.63	0.79
8	glm	0.52	0.82	0.43	0.80
9	Moyenne totale	0.53	0.92	0.56	0.92



2.12 Gros Jointure SDP Median entre deux SDP

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015235135118>
```

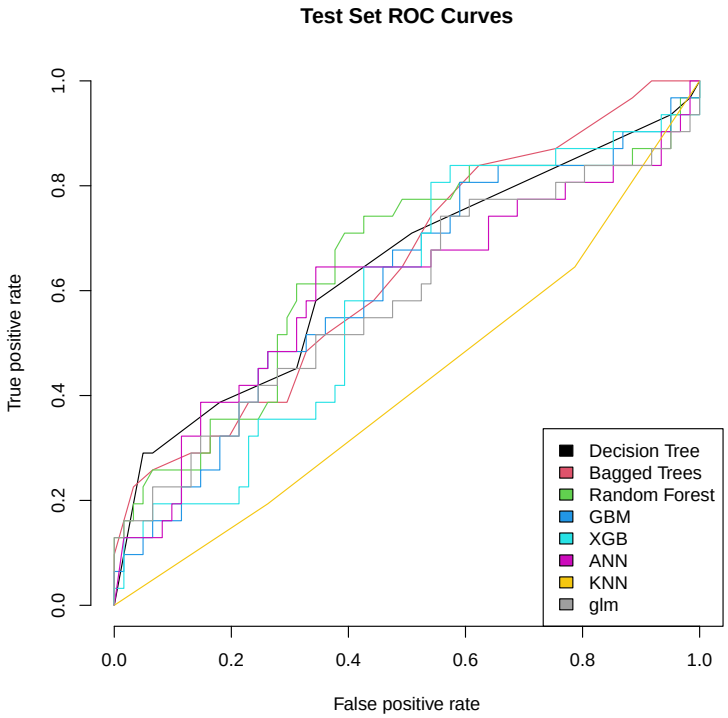
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.60	0.88	0.59	0.84
2	Bagged Trees	0.62	1.00	0.59	1.00
3	Random Forest	0.60	1.00	0.63	0.99
4	GBM	0.54	1.00	0.61	0.95
5	XGB	0.52	1.00	0.61	1.00
6	ANN	0.58	0.99	0.51	0.99
7	Knn	0.63	0.72	0.68	0.77
8	glm	0.55	0.85	0.44	0.83
9	Moyenne totale	0.58	0.93	0.58	0.92



2.13 Gros Jointure SDP Mean 60 minutes

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x00000152397769b8>
```

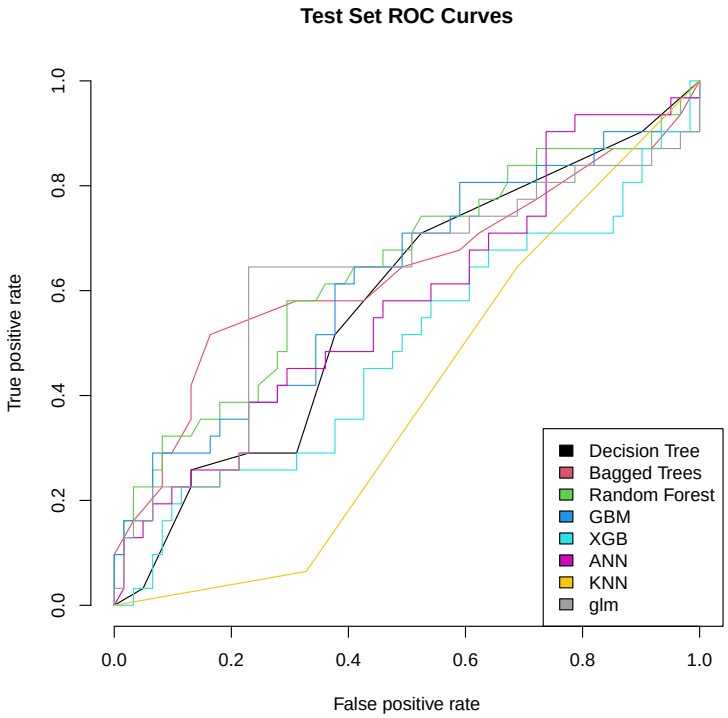
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.64	0.82	0.64	0.82
2	Bagged Trees	0.64	1.00	0.64	0.99
3	Random Forest	0.65	1.00	0.66	0.99
4	GBM	0.61	1.00	0.65	0.95
5	XGB	0.59	1.00	0.62	0.99
6	ANN	0.60	0.96	0.64	0.98
7	Knn	0.64	0.71	0.68	0.76
8	glm	0.59	0.78	0.66	0.76
9	Moyenne totale	0.62	0.91	0.65	0.90



2.14 Gros Jointure SDP Max 60 minutes

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x000001522d856930>
```

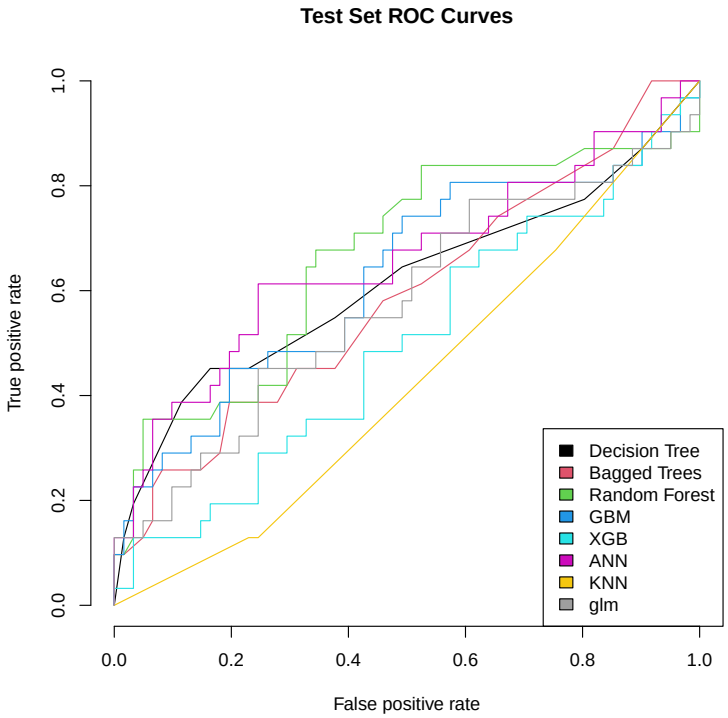
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.58	0.83	0.57	0.80
2	Bagged Trees	0.63	1.00	0.70	0.99
3	Random Forest	0.64	1.00	0.72	0.99
4	GBM	0.62	1.00	0.66	0.95
5	XGB	0.49	1.00	0.60	0.99
6	ANN	0.58	0.92	0.61	0.96
7	Knn	0.65	0.74	0.71	0.78
8	glm	0.62	0.80	0.61	0.75
9	Moyenne totale	0.60	0.91	0.65	0.90



2.15 Gros Jointure SDP Median 60 minutes

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x000001522d25dfd0>
```

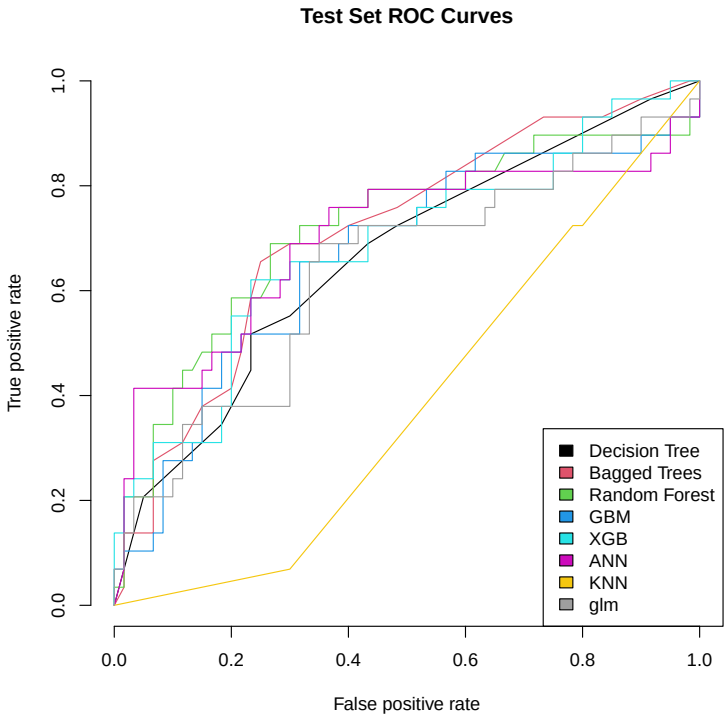
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.61	0.84	0.71	0.82
2	Bagged Trees	0.59	1.00	0.64	1.00
3	Random Forest	0.66	1.00	0.74	0.99
4	GBM	0.63	1.00	0.68	0.95
5	XGB	0.50	1.00	0.57	0.99
6	ANN	0.66	0.94	0.70	0.97
7	Knn	0.67	0.75	0.72	0.77
8	glm	0.58	0.78	0.64	0.76
9	Moyenne totale	0.61	0.91	0.67	0.91



2.16 Gros Jointure SDP Mean 10 minutes

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015236389e78>
```

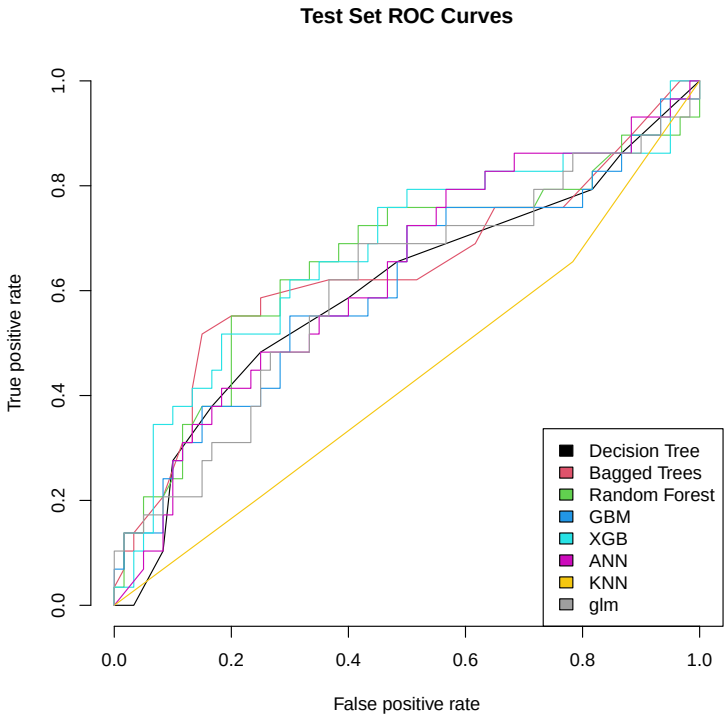
	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.66	0.80	0.69	0.82
2	Bagged Trees	0.71	1.00	0.67	1.00
3	Random Forest	0.72	1.00	0.72	0.99
4	GBM	0.66	1.00	0.69	0.97
5	XGB	0.68	1.00	0.72	1.00
6	ANN	0.70	0.97	0.66	0.98
7	Knn	0.55	0.70	0.64	0.76
8	glm	0.64	0.81	0.70	0.78
9	Moyenne totale	0.67	0.91	0.69	0.91



2.17 Gros Jointure SDP Max 10 minutes

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x000001523965c288>
```

	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.60	0.83	0.66	0.81
2	Bagged Trees	0.64	1.00	0.74	1.00
3	Random Forest	0.65	1.00	0.67	0.99
4	GBM	0.61	1.00	0.70	0.95
5	XGB	0.67	1.00	0.70	1.00
6	ANN	0.63	0.97	0.66	0.98
7	Knn	0.64	0.70	0.72	0.76
8	glm	0.61	0.81	0.64	0.78
9	Moyenne totale	0.63	0.91	0.69	0.91



2.18 Gros Jointure SDP Median 10 minutes

```
## X250µm ~ Poste + Qualité + CPT_2500 + CPT400 + CPT160 + CPT125 +
##     CPT40 + CPT_40 + retart + dure + Débit_CV004 + Dilution_SB002 +
##     Arrosage_Crible_SC003 + Dilution_HP14 + Dilution_HP15 + Dilution_HP18 +
##     Dilution_HP19 + Pression_PK12 + Pression_PK13 + Pression_PK14 +
##     Pression_PK16 + Pression_PK18
## <environment: 0x0000015236696120>
```

	Methode	AUC_test	AUC_train	accuracy_test	accuracy_train
1	Decision Tree	0.68	0.84	0.66	0.81
2	Bagged Trees	0.68	1.00	0.71	1.00
3	Random Forest	0.72	1.00	0.75	0.99
4	GBM	0.69	1.00	0.73	0.96
5	XGB	0.63	1.00	0.62	1.00
6	ANN	0.69	0.96	0.75	0.98
7	Knn	0.65	0.71	0.72	0.77
8	glm	0.63	0.81	0.69	0.79
9	Moyenne totale	0.67	0.91	0.70	0.91