

SQL Query 1 – tacking rejections

Objective - Rejection is a waste and reduction of this would directly improve the bottom-line. A report for analytics, action and management review of information will help bring focus the Quality Reject Reduction (QRR) program. RM/PM rejection can also be recovered from vendors depending on contract clauses. Quality team drives this measure with a target of QRR less than 0.5% of Gross revenue

Approach - This query would extract data for quality reject of FG & RM/PM stocks by sites from Site_inventory table. We will then join it with Inventory_master table to get SKU description and determine cost of each product. The objective is to show rejection value by SKU at various sites

The data will be pulled once every day as all quality rejects are destroyed by the end of the day. Since the inventory data is transactional - the above information will have to be stored in another database for trend and other analytics.

```
SELECT a.Location_id,  
(SELECT x. Location_type FROM Site_details x WHERE  
x.Location_id = a. Location_id) AS Location_type,  
a.Material_code, b.Material_description,  
b.Material_type, a.Quality_reject,  
a.Quality_reject * b.Material_value_perUnit AS  
Total_writeoff_value  
FROM Site_inventory a  
LEFT JOIN Inventory_master b  
ON a.Material_code = b.Material_code  
WHERE a.Quality_reject > 0
```

SQL Query 2 – tracking freshness

Objective – Our research has shown FG Product freshness is a key driver for sales. *The management is committed to deliver products within 1 day of manufacturing for all FG SKUs with shelf life less than 5 days. Committed Freshness Delivered (CFD) is a Key measure and is calculated as $\Rightarrow 1 - (\text{FG with freshness greater than 1 days} / \text{sum of all FG})$; for all FG with shelf life less than or equal to 5 day.* The supply chain team drives this measure with a target of 95% CFD

Approach - This query would extract data for Remaining Shelf life by sites from Site_inventory table. We will then join it with Inventory_master table to get Total_shelf_life. We will then filter out data only for FG and those with Shelf life less than 5 days. We will also calculate the % CFD by FG and Location_id

The data will be pulled once every day. Since the inventory data is transactional and the aging will change everyday- the above information will have to be stored in another database for trend and other analytics.

```
SELECT x.Location_id, x.Material_code, y.Mat_desc AS
Material_description, y.Mat_qty_below_SL, SUM (x.Material_qty)
AS Total_Mat_qty, ( 1- (y.Mat_qty_below_SL / SUM
(x.Material_qty)) * 100 AS CFD%
FROM Site_inventory x
LEFT JOIN (
SELECT a.Location_id AS Loc_id, a.Material_code AS Mat_code,
b.Material_description AS Mat_desc, SUM(a.Material_qty) AS
Mat_qty_below_SL
FROM Site_inventory a
LEFT JOIN Inventory_master b
ON a.Material_code = b.Material_code
WHERE b.Material_type = "FG" AND b.Total_shelf_life <= 5 AND
(b.Total_shelf_life - a.Shelf_life_remain_days) > 1) y
ON x.Material_code = y.Mat_code
```

Tables with data – Site_Inventory

Site_inventory					
Inventory_record_number <PK>	Location_id	Material_code	Material_qty	Shelf_life_remain_day	Quality_reject
100001	1001	5001	100	210	5
100002	1001	5002	20	165	0
100003	1001	5003	1000	7	43
100004	1001	5004	3	120	0
100005	1001	5005	10	240	0
100006	1001	5006	5	270	0
100007	1001	5007	3	150	0
100008	1001	5008	30	175	1
100009	1002	5001	80	210	1
100010	1002	5002	15	165	0
100011	1002	5003	700	7	32
100012	1002	5004	2	120	0
100013	1002	5005	7	240	0
100014	1002	5006	5	270	0
100015	1002	5007	3	150	0
100016	1002	5008	20	175	1
100017	1003	4003	13	29	0.5
100018	1003	4002	11	2	0
100019	1003	4004	14	1	0
100020	1003	6002	400	300	0
100021	1004	4005	15	3	1
100022	1004	4003	12	27	0
100023	1004	4001	10	2	0
100024	1004	6002	400	300	0
100025	1005	4006	15	2	0
100026	1005	4002	20	2	0
100027	1005	4006	10	2	0
100028	1005	6002	400	300	0
100029	1006	4001	16	2	0
100030	1006	4002	11	2	2
100031	1006	4003	14	25	0
100032	1006	6002	400	300	0
100033	1007	4007	16	1	0
100034	1007	4006	11	2	0
100035	1007	4004	17	1	0
100036	1007	6002	400	300	0
100037	1008	4001	17	2	1
100038	1008	4007	13	1	2
100039	1008	4003	12	28	0
100040	1008	6002	400	300	0
100041	1009	4001	11	2	0
100042	1009	6001	400	300	0

Tables with data – Inventory_master

Inventory_master					
Material_code <PK>	Material_description	Material_type	UOM	Material_value_perUnit	Total_shelf_life
4001	Cake	FG	KG	1000	3
4002	Cheesecake	FG	EA	120	3
4003	Cookie	FG	KG	550	30
4004	Doughnut	FG	EA	80	2
4005	pastry	FG	EA	100	4
4006	Pudding	FG	EA	140	3
4007	Sandwich	FG	EA	60	2
5001	flour	RM	KG	30	240
5002	Sugur	RM	KG	45	180
5003	Egg	RM	EA	5	10
5004	Baking powder	RM	KG	200	180
5005	Butter	RM	KG	600	360
5006	Yeast	RM	KG	500	360
5007	Flavouring agent	RM	Ltr	2000	180
5008	Corn Starch	RM	KG	250	180
6001	Big box	PM	EA	5	360
6002	Medium box	PM	EA	3.5	360
6003	Small box	PM	EA	2.5	360

Tables with data – Site_Details

Site_details								
Location_id	<PK>	Location_type	Location_address	Location_pincode	Food_license_no	Fire_license_no	Health_license_no	Site_area
1001		Kitchen	aksdnakns	110100	AQER12	385u73	AAEQ45PR	3000
1002		Kitchen	iojiefna	110110	OFDB23	982j32	AAEQ45PR	2500
1003		Store	dkgfesing	110110	RNDH38	731q65	AAEQ45PR	350
1004		Store	fopwevv	110112	ONDG83	839s93	AAEQ45PR	400
1005		Store	vnevn'alsmv	110114	BFID35	732s84	AAEQ45PR	280
1006		Store	emvoms'mv	110102	FONF29	472h30	AAEQ45PR	320
1007		Store	wokc,sz;c	110104	ONFS92	482j30	AAEQ45PR	340
1008		Store	vmcasklcmac	110108	DONS56	904k20	AAEQ45PR	320
1009		Online_Store	online	110110	FINS12	302l02	AAEQ45PR	0