



# **C3P INVENTORY SURVEY FOR CMD-RESISTANT CASSAVA VARIETIES IN BURUNDI**

## **COUNTRY REPORT**

BY

**EARRNET Coordination Office**

**International Institute of Tropical Agriculture**

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## **1. Introduction**

Catholic Relief Services (CRS) and International Institute of Tropical Agriculture (IITA) are jointly implementing the Crop Crisis Control Project (C3P) on cassava and bananas production in six East and Central African (ECA) countries i.e. Uganda, Tanzania, Rwanda, Kenya, Burundi and DR. Congo. Within the target countries, the implementation is being done in conjunction with country National Agricultural Research Systems (NARS) and other local partner organisations. The focus of the project is to fight cassava mosaic virus disease (CMD) and banana bacterial blight (BXW). IITA and CRS already have working partners in those countries who will help in the project implementation.

CMD is one of the greatest threats to cassava production in the above sub region. Recent research shows that the CMD pandemic affects about 2,600,000 ha of cassava leading to a loss of 22 million metric tons of produce annually (C3P proposal). All the local varieties grown by farmers in this sub region have virtually become susceptible to CMD. As a result of this pandemic, production of cassava has been affected in most areas and food insecurity is on the rise among the rural poor.

IITA in collaboration with National Cassava Programs of partner countries have held improved cassava germplasm exchange and conducted a number of on-farm cassava participatory evaluations that have resulted in the identification of many CMD-resistant varieties in each of the countries. The multiplication and dissemination of these varieties are limited due to the fact that multiplication and distribution require a lot of funds (economic hardships in multiplication and distribution) and poor or inexistent extension service delivery. The project is aiming at increasing multiplication and distribution of the improved varieties among rural farmers that are facing the CMD problem.

To achieve the above objective the project intends to deploy effective CMD control strategies among the farming communities. This is through multiplication and distribution of CMD-resistant varieties and promotion of improved management practices. As such, there is need to have inventory of available CMD-resistant varieties and establish the amount of planting materials available as well as their health status before multiplication and distribution are carried out.

## **2. Materials and Method**

### **2.1 Team Composition**

The survey team comprised of researchers from IITA-Uganda and EARRNET, ISABU Cassava Program, C3P Country Coordinator for Burundi and an Official from Ministry of Agriculture Plant Protection department. Also extension staff from areas visited were brought on board to guide the team in their respective areas of jurisdiction especially from NGOs. All the survey was done as one team.

### **2.2 Area and farmers visited**

The inventory survey for CMD-resistant materials in Burundi was conducted from 7<sup>th</sup> to 10<sup>th</sup> August 2006 covering 4 provinces of Cibitoke, Rutana, Kirundo and Ngozi (Table 1) where most of multiplication activities are taking place. These are main areas where cassava is grown and generally dry with poor soils. In Cibitoke province, Rugombo Commune was

visited, in Rutana Province, Gitanga and Bukemba Communes were visited, in Kirundo Province, Busoni and Kirundo Communes were visited while in Ngozi Province it was Tangara Commune only.

Table 1. Area and farmers visited

Province	Commune	Colline	Village	Institution
Cibitoke	Rugombo	Rujembo	Mparambo	ISABU
Rutana	Gitanga	Bigina	Bigina	ISABU
	Bukemba	Bukemba	Gihofi	ISABU
Kirundo	Busoni	Burara/Rusarasi	Murore	CRS
		Rugarama	Rugarama	CRS
	Kirundo	Yaranda	Kigozi	CRS
		Mutwenzi	Mutwenzi	CRS
	Kanyinya	Kanyinya	CRS	
Ngozi	Tangara	Gisha	Musenyi	ISABU

Due to the vast nature of the area surveyed and limited time, the team focused only to places where cassava multiplication was undertaken. Before the start of the survey, the team held a brief meeting at CRS offices in Bujumbura where these areas were selected and five cassava varieties for C3P for the multiplication and distribution were agreed. These were the varieties the team focused on in the course of its survey and were MM96/0287, MM96/7688, MM96/5280, MM96/7204 and Abbey Ife. These were all IITA improved varieties that had been evaluated in the country and recommended for production. The C3P country target for Burundi cassava multiplication was 150 Ha and intended to cover the whole country.

### 2.3 Field Sampling

The team travelled to ISABU stations, CRS offices and Farmer groups to get information on the availability of improved materials. Fields were selected for quantification, disease and pest assessment basing on the followings;

- Availability of improved cassava materials
- Willingness of the owner to sell the material
- Field size of not less than 200m<sup>2</sup>
- Age of the planting materials of not less than 7 months or more than 24 months old.

Assessment was done using a simplified data sheet designed by IITA-EARRNET to ease quantification and assessment of the health status of the planting materials. A total of 27 fields (plots) belonging to the above institutions were surveyed and sampled for various parameters such plant height and number of stems per stool to estimate number of cutting per plant, plant population, disease and pest incidence and severity (CMD,CBSD, CBB, MB, CGM), stem quality and general field management. Additional information such as plant age, sources and outlet for the planting materials were obtained from the owners of the fields.

## 3. Findings

### 3.1 General information from the multiplication sites and farmers visited

The size of the cassava fields surveyed ranged from 0.02 ha to 9.0 ha and crop age ranged 7 – 9 months old.. About 82% of the fields were first crop stems while 18% of the fields were

ratoon crop stems. Plant population ranges from 7,500-16,100 plants per hectare with a general average of 10,988 plants/ha. The high average number of plants per hectare was because of 1M x 0.5 M spacing in some multiplication sites. The number of cuttings per stool was variable and depended on the variety, crop age, soil condition, field management, and first or ratooned crop. It ranged from 3 to 17 cuttings per stool (table 2). All the fields surveyed were planted as sole crops.

Table 2. General Field (plot) information

Field No.	Farmer / Institution	Variety	Crop Age (months)	Area (m <sup>2</sup> )	Plant Popn/ha	Cuttings/plant
1	ISABU	MM96/0287	8	90000	10000	17
2	ISABU	MM96/7204	8	4000	7500	10
3	ISABU	MM96/7688	7	28000	15400	8
4	ISABU	MM96/7204	7	47000	16100	7
5	ISABU	MM96/0287	7	38000	14600	8
6	ISABU	MM96/5280	7	25000	8100	10
7	ISABU	Abbey Ife	7	10000	8700	11
8	ISABU	MM96/5280	7	18000	11800	6
9	ISABU	Abbey Ife	7	18000	13600	10
10	ISABU	MM96/7688	7	18000	12900	11
11	ISABU	MM96/0287	7	27000	10000	7
12	ISABU	MM96/7204	7	18000	12900	7
13	CRS	MM96/7688	9	2244	11500	15
14	CRS	MM96/7204	9	705	11900	8
15	CRS	MM96/5280	9	225	12900	11
16	CRS	Abbey Ife	9	658	11500	14
17	CRS	MM96/5280	8	6935	11800	5
18	CRS	MM96/7688	8	6350	10000	6
19	CRS	Abbey Ife	8	4855	9800	7
20	CRS	MM96/5280	8	1108	10100	8
21	CRS	Abbey Ife	8	1682	10400	6
22	CRS	Abbey Ife	9	5000	9500	8
23	CRS	MM96/5280	9	10000	11500	6
24	ISABU	MM96/5280	7	10000	9500	8
25	ISABU	MM96/0287	7	10000	8100	6
26	ISABU	MM96/7688	7	10000	8100	6
27	ISABU	MM96/7204	7	10000	8500	5
<b>Total/Average</b>				<b>425762</b>	<b>10845</b>	<b>8</b>

### 3.2 Quantity and value of improved materials available

More improved varieties were found in the Rutana Province in the South of the country than in the other three provinces of Cibitoke, Kirundo and Ngozi put together. This is because of the extensive multiplication by the ISABU at Bigina and ISABU Moso sites. It also provided irrigation facilities and that gave good growth conditions. ISABU Moso is also the site where these varieties were first evaluated. The second province with high materials was Cibitoke on the northern part of the country and in this site also there was irrigation done by gravity flow and thus good growth condition for the multiplication. Irrigation gave these two provinces good opportunity of multiplication under dry season which the country was experiencing at the time of the survey. Ngozi province had the lowest amount of materials from the provinces surveyed.

The estimated amount of cassava planting materials expected from the survey is about 4694685 cuttings of which 2251100 cuttings are of MM96/0287, 793287 cuttings of MM96/7204, 696656 cuttings of MM96/7688, 517183 cuttings of MM96/5280 and 436459 of Abbey Ife. (Table 3). More than the estimated cuttings were expected because in some sites surveyed, the stems had not yet attained maturity.. The quantities surveyed were high because the multiplication was undertaken by the Government and the NGOs who had planted big areas unlike if it were at farmers.

The multiplication for each variety was fairly good and it shall leave some room for CRS to carry out the distribution for all the varieties targeted. However, Abbey Ife was a bit low in quantity while MM96/0287 very abundant. The available surveyed materials were three times CRS target of 150 Ha requiring about 1,500,000 cuttings.

Table 3: Summary of the Quantified materials by Province and Variety

Province	No. Sites	Est. cuttings MM96/0287	Est. cuttings MM96/7204	Est. cuttings MM96/7688	Est. cuttings MM96/5280	Est. cuttings Abbey Ife	Total
Cibitoke	1	1562976	30405	0	0	0	1621977
Rutana	2	639524	715446	571330	322316	341681	2590298
Kirundo	5	0	7044	75155	118107	94778	295082
Ngozi	1	48600	40392	50171	76760	0	215923
<b>Total</b>	<b>9</b>	<b>2251100</b>	<b>793287</b>	<b>696656</b>	<b>517183</b>	<b>436459</b>	<b>4694685</b>

**a) MM96/0287**

The MM96/0287 genotype gave the highest number of cuttings with about 2251100 cuttings. The ISABU site at Cibitoke province had the largest quantity of 1562976 cuttings while in Rutana province there were 639525 cuttings. Kirundo province had no multiplication of this variety. It is a yellow fleshed variety.

**b) MM96/7204**

This variety was the second in terms of availability with 793287 cuttings in ISABU Rutana province leading with 715446 cuttings. Other provinces had also multiplied them in small quantities. This variety is also yellow fleshed.

**c) MM96/7688**

This variety was the third in terms of available materials with about 696656 cuttings with again ISABU in Rutana province having the highest quantity of 571330 cuttings followed by Kirundo province under CRS with 75155 cuttings. The others had smaller quantities of the variety. It is a white fleshed variety.

**d) MM96/5280**

This variety was the fourth in terms of available materials and it is white fleshed. It was fairly multiplied at ISABU Rutana and CRS Kirundo. It was also multiplied in the two provinces in smaller quantities.

e) **Abbey Ife**

This was the least multiplied variety with about 436459 cuttings. This was also fairly multiplied by ISABU at Rutana and CRS at Kirundo. It is a white fleshed variety but there were some complaints from farmers that it has a bitter taste.

Other improved variety found promoted or in the pipeline of being promoted by the cassava program not to be used in the C3P project was MM96/0735. No data was collected from this variety.

The total value of all the improved materials is estimated at 46,946,850 Burundi Francs i.e. about 46,026 US dollars. Table 5 shows the estimated cost that will be required (detailed amount in Burundi Francs) one can spend on the quantified materials per variety on farm basis (table 4).

Table 4. Quantity (cuttings) of improved cassava varieties at different farms

Farm / Institutn	Est. cuttings MM96/0287	Est. cuttings MM96/7204	Est. cuttings MM96/7688	Est. cuttings MM96/5280	Est. cuttings Abbey Ife	Total
ISABU Cibitoke	1562976	30405	0	0	0	1593381
ISABU Bigina	455147	549818	323814	203780	94727	1627286
ISABU Moso	184378	165628	247516	118536	246954	963012
CRS Burara	0	7043	39958	3276	10617	60893
CRS Rugarama	0	0	35197	38841	0	74038
CRS Yaranda	0	0	0	8819	34138	42957
CRS Mutwenzi	0	0	0	0	10021	10021
CRS Kanyinya	0	0	0	67172	40002	107173
ISABU Musenyi	48600	40392	50171	76760	0	215923
<b>Total</b>						<b>4694685</b>

An average price of 10 Burundi Francs per cutting was reported as the prevailing price in the country for the improved cuttings.

Table 5. Value of planting materials available

Farm / Institutn	Est. Value MM96/0287	Est. value MM96/7204	Est. value MM96/7688	Est. value MM96/5280	Est. value Abbey Ife	Total value
ISABU Cibitoke	15,629,760	304,050	0	0	0	15,933,810
ISABU Bigina	4,551,470	5,498,180	3,238,140	2,037,800	947,270	16,272,860
ISABU Moso	1,843,780	1,656,280	2,475,160	1,185,360	2469,540	9,630,120
CRS Burara	0	70,430	399,580	32,760	106,170	608,930
CRS Rugarama	0	0	351,970	388,410	0	740,380
CRS Yaranda	0	0	0	88,190	341,380	429,570
CRS Mutwenzi	0	0	0	0	100,210	100,210
CRS Kanyinya	0	0	0	671,720	400,020	1,071,730
ISABU Musenyi	486,000	403,920	501,710	767,600	0	2,159,230
<b>Total</b>	<b>22,511,000</b>	<b>7,932,870</b>	<b>6,966,560</b>	<b>5,171,830</b>	<b>4,364,590</b>	<b>46,946,850</b>

### 3.4 Health status of the improved materials

During the assessment exercise the plants were assessed for incidence of diseases and pests such as cassava mosaic disease (CMD) cassava brown streak disease (CBSD) and cassava bacterial blight (CBB). On pests, incidence and severity of cassava green mite (CGM) and incidence of cassava mealy bug (CM) were also assessed (Table 6).

Table 6. Average disease and pest incidence and severity on improved cassava varieties

Variety	CMDi	CMDs	CBSDi	CBBi	CBBs	CM i	CGMi	CGMs
MM96/0287	3	2	0	0	1	0	40	2
MM96/7688	3	2	0	0	1	0	65	3
MM96/7204	1	2	0	0	1	0	66	2
MM96/5280	0	1	0	0	1	0	99	4
Abbey Ife	4	2	0	0	1	0	69	3

#### a) CMD

Generally there was a low incidence of CMD on the varieties quantified with an average incidence of 3% on MM96/0287 with severity score of 2 with it only observed in 3% of the fields surveyed that is in Cibitoke. Also 1% CMD incidence with score 2 was noted in MM96/7204 but in only 3% of the fields surveyed that is say in only one site of the fields visited. It is MM96/7688 and Abbey Ife which had slightly higher incidence of 3% and 4% respectively and both had score 2. The CMD incidence based on the field surveyed was also high at about 10% of the total field visited. In MM96/5280 no CMD was observed in the fields surveyed indicating that it was the best among the 5 varieties. This shows that the varieties and the materials surveyed were suitable for the C3P for fighting of the CMD pandemic. Those with CMD symptoms can be cleaned by rouging the diseased plants at cutting time or removed in the new planting.

#### b) CBSD

This was not observed in any of the fields visited although the cassava team was cautioned to be on alert and assess on the possible presence of CBSD as it has been already observed in the DRC, Uganda, and Western Kenya when it was thought to be the disease of the low coast land in Eastern Africa.

#### c) CBB

This was not observed in any of the field visited probably because it was dry season in the area. However, earlier attack was also not observed on the crop.

#### d) CGM

This was highest observed biotic stress in the survey because all the 5 varieties were attacked. MM96/5280 had the highest average incidence of 99% and severity of 4. It was followed by Abbey Ife with average incidence of 69% and severity score 3. MM96/7204 and MM96/0287 had less CGM damage with score 2.. The relatively high incidence of CGM could be due to the dry weather being experienced in the region to which CGM attack is well associated.



e) **CM**

This was not observed in the field visited.

f) **Whiteflies**

Though no data was taken on this pest, it was observed a big problem in Kirundo province where soil fertility was low and generally a dry area. The damage was very extensive with drying of top leaves and tips noted in many of the sites. The most affected genotype was Abbey Ife.

### **3.4 Sources of varieties and market outlets for stems**

The source of all the improved materials surveyed was sourced from ISABU research stations of Moso, Imbo and Muyinga. Other sources were from NGO like FAO and CRS that had first chance of access to the materials from research. These materials were supplied from these sites to secondary multiplication sites under government or NGOs. Although improved planting materials have been moving from research through intermediaries like Government agencies and NGOs these varieties had not reached the farmers for production level.

ISABU who had multiplied the improved materials of cassava was ready to sell their stems to CRS. Also on the other had CRS had done her multiplications and shall now use them in the C3P project. There were also other partners who had carried out multiplication such as FAO, Carita, World Vision, AFRICARE and many others from which CRS can get the stems in case those surveyed shall not be enough.

### **3.5 General observations**

Most farmers were still growing local materials which are highly susceptible to CMD. The incidence of CMD on most local ranged from 30%-100% with severity score of 3-5. This is because improved varieties were still scarce or lacked awareness of existence of such.

## **4 Conclusions and Recommendations**

### **4.1 Conclusions**

- Based on the plant health status and availability , potentials varieties for C3P project were as follows MM96/5280, MM96/7204, MM96/0287, MM96/7688 and Abbey Ife
- The materials were available in all major parts of the country i.e. north, south and East and thus transport costs are reduced when procurement is timely done.
- Proper multiplication be maintained variety purity as it is currently
- The cassava program begins to breed for CBSD and whitefly resistance because two of its varieties are susceptible.
- CGM is a challenge to the production of CMD resistant varieties especially for MM96/5280.

## 4.2 Recommendations

- The materials for five varieties selected are procured for direct distribution to farmers in targeted areas.
- Although CBSD was not observed in the region, its threat from neighbouring countries is real. Therefore precautionary measures should be taken in all materials on multiplication and distribution.
- There is need for CRS to secure material which have so far been quantified by issuing vouchers to the ISABU. The vouchers will be some sort of assurance for it.
- To ensure the right varieties and good quality materials are collected from the sites, an experienced technician from ISABU should be involved in collection of the materials. He/she should be able to scout the whole field (plot) and remove all the off-types where it happens. This is because few cases of variety mix were observed.
- Proper labelling and record should be done during collection of materials and planting to ensure purity of the materials.

## Appendices

### Appendix 1. Farm location

Field No.	Farmer (farm)	Province	Commune	Village	Longitude	Latitude	Elevation (m)
	ISABU	Cibitoke	Rugombo	Mparambo	02°50.55S	029°04.14E	940
	ISABU	Cibitoke	Rugombo	Mparambo	02°50.78S	029°04.32E	944
	ISABU	Rutana	Gitanga	Bigina	03°59.75S	029°57.58E	1418
	ISABU	Rutana	Gitanga	Bigina	03°59.72S	029°57.64E	1421
	ISABU	Rutana	Gitanga	Bigina	03°59.76S	029°57.65E	1416
	ISABU	Rutana	Gitanga	Bigina	03°59.58S	029°57.78E	1408
	ISABU	Rutana	Gitanga	Bigina	03°59.58S	029°57.78E	1408
	ISABU Moso	Rutana	Bukemba	Gihofi	03°59.73S	030°04.67E	1305
	ISABU Moso	Rutana	Bukemba	Gihofi	03°59.74S	030°04.71E	1316
	ISABU Moso	Rutana	Bukemba	Gihofi	03°59.73S	030°04.70E	1306
	ISABU Moso	Rutana	Bukemba	Gihofi	03°59.70S	030°04.69E	1309
	ISABU Moso	Rutana	Bukemba	Gihofi	03°59.72S	030°04.67E	1309
	CRS	Kirundo	Busoni	Murore			
	CRS	Kirundo	Busoni	Murore			
	CRS	Kirundo	Busoni	Murore			
	CRS	Kirundo	Busoni	Murore			
	CRS	Kirundo	Busoni	Rugarama			
	CRS	Kirundo	Busoni	Rugarama			
	CRS	Kirundo	Kirundo	Kigozi			
	CRS	Kirundo	Kirundo	Kigozi			
	CRS	Kirundo	Kirundo	Mutwenzi			
	CRS	Kirundo	Kirundo	Kanyinya			
	CRS	Kirundo	Kirundo	Kanyinya			
	ISABU	Ngozi	Tangara	Musenyi	02°55.69S	029°57.15E	1707
	ISABU	Ngozi	Tangara	Musenyi	02°55.70S	029°57.14E	1711
26	ISABU	Ngozi	Tangara	Musenyi	02°55.65S	029°57.15E	1717
27	ISABU	Ngozi	Tangara	Musenyi	02°55.67S	029°57.17E	1721

Appendix 2. Improved variety quantification and value

Field No.	Farmer (Farm)	Variety	Crop Age	Area (m <sup>2</sup> )	PP/ha	cutting/plant	Available Cuttings	Value (Bur Francs)
1	ISABU	MM96/0287	8	90000	10000	17	1562976	15,629,760
2	ISABU	MM96/7688	4	4000	10100	6	25965	259,650
3	ISABU	MM96/5280	4	1000	7700	3	2631	26,310
4	ISABU	MM96/7204	8	4000	7500	10	30405	304,050
5	ISABU	MM96/7688	7	28000	15400	8	323814	3,238,140
6	ISABU	MM96/7204	7	47000	16100	7	549818	5,498,180
7	ISABU	MM96/0287	7	38000	14600	8	455147	4,551,470
8	ISABU	MM96/5280	7	25000	8100	10	203780	2,037,800
9	ISABU	Abbey Ife	7	10000	8700	11	94727	947,270
10	ISABU	MM96/5280	7	18000	11800	6	118536	1,185,360
11	ISABU	Abbey Ife	7	18000	13600	10	246954	2,469,540
12	ISABU	MM96/7688	7	18000	12900	11	247516	2,475,160
13	ISABU	MM96/0287	7	27000	10000	7	184378	1,843,780
14	ISABU	MM96/7204	7	18000	12900	7	165628	1,656,280
15	CRS	MM96/7688	9	2244	11500	15	39958	399,580
16	CRS	MM96/7204	9	705	11900	8	7043	70,430
17	CRS	MM96/5280	9	225	12900	11	3276	32,760
18	CRS	Abbey Ife	9	658	11500	14	10617	106,170
19	CRS	MM96/5280	8	6935	11800	5	38841	388,410
20	CRS	MM96/7688	8	6350	10000	6	35197	351,970
21	CRS	Abbey Ife	8	4855	9800	7	34138	341,380
22	CRS	MM96/5280	8	1108	10100	8	8819	88,190
23	CRS	Abbey Ife	8	1682	10400	6	10021	100,210
24	CRS	Abbey Ife	9	5000	9500	8	40002	400,020
25	CRS	MM96/5280	9	10000	11500	6	67172	671,720
26	ISABU	MM96/5280	7	10000	9500	8	76760	767,600
27	ISABU	MM96/0287	7	10000	8100	6	48600	486,000
28	ISABU	MM96/7688	7	10000	8100	6	50171	501,710
29	ISABU	MM96/7204	7	10000	8500	5	40392	403,920
<b>Total/Average</b>				<b>425762</b>	<b>10845</b>	<b>8</b>	<b>4723281</b>	<b>47,232,810</b>

Appendix 3. Disease and pest incidences and severities on improved varieties

Field No.	Farmer	Variety	CMDi	CMDs	CBSDi	CBBi	CBBs	CM i	CGMi	CGMs
1	ISABU	MM96/0287	3	2	0	0	1	0	5	2
2	ISABU	MM96/7688	5	3	0	0	1	0	0	1
3	ISABU	MM96/5280	0	1	0	0	1	0	0	1
4	ISABU	MM96/7204	1	2	0	0	1	0	0	1
5	ISABU	MM96/7688	0	1	0	0	1	0	20	2
6	ISABU	MM96/7204	0	1	0	0	1	0	5	2
7	ISABU	MM96/0287	0	1	0	0	1	0	5	2
8	ISABU	MM96/5280	0	1	0	0	1	0	100	5
9	ISABU	Abbey Ife	0	1	0	0	1	0	10	2
10	ISABU	MM96/5280	0	1	0	0	1	0	100	3
11	ISABU	Abbey Ife	0	1	0	0	1	0	40	2
12	ISABU	MM96/7688	0	1	0	0	1	0	5	2
13	ISABU	MM96/0287	0	1	0	0	1	0	70	2
14	ISABU	MM96/7204	0	1	0	0	1	0	90	2
15	CRS	MM96/7688	2	2	0	0	1	0	100	3
16	CRS	MM96/7204	0	1	0	0	1	0	100	3
17	CRS	MM96/5280	0	1	0	0	1	0	10	2
18	CRS	Abbey Ife	0	1	0	0	1	0	100	4
19	CRS	MM96/5280	0	1	0	0	1	0	100	5
20	CRS	MM96/7688	3	2	0	0	1	0	100	5
21	CRS	Abbey Ife	1	2	0	0	1	0	100	4
22	CRS	MM96/5280	0	1	0	0	1	0	100	3
23	CRS	Abbey Ife	1	2	0	0	1	0	50	2
24	CRS	Abbey Ife	10	2	0	0	1	0	70	2
25	CRS	MM96/5280	0	1	0	0	1	0	100	4
26	ISABU	MM96/5280	0	1	0	0	1	0	90	2
27	ISABU	MM96/0287	0	1	0	0	1	0	80	2
28	ISABU	MM96/7688	0	1	0	0	1	0	100	3
29	ISABU	MM96/7204	0	1	0	0	1	0	70	2