# PROCEEDINGS OF THE COMMISSIONER AND DIRECTOR OF SCHOOL EDUCATION :: ANDHRA PRADESH :: HYDERABAD - 4.

Present: Sri N.Sivasankar, I.A.S.

### Rc. No. 160/MDM/2012

Dated:23/06/2012

Sub:- Mid Day Meal Scheme - Constitution/setting up of Steering cum Monitoring Committee at State level to oversee the implementation of Mid Day Meal Scheme - Meeting held on 17/02/2012 at 3.00 P.M. at Conference Hall, GAD, Secretariat, Hyderabad - Menus which have nutrition - Communicated.

Read: - 1. Govt. U.O. Note No. 19363/Prog. I/A1/2010, dated: 01/03/2012.

- 2. C&DSE's Lr.Rc.No.160/MDM/2012-2, dated:11/05/2012.
- 3. Director, NIN, Hyderabad Lr.No.D/Gen./2012/159, dated:08/06/2012.

While enclosing copies of the menus/nutritional recipes prepared by NIN and Associate Professor, Home Science College, Hyderabad, all the District Educational Officers in the State are requested to take further necessary action in the matter.

This has the approval of Commissioner and Director of School Education, Andhra Pradesh, Hyderabad.

Encl: As above

PRONOTI SUHASINI KAVOORI for COMMISSIONER AND DIRECTOR OF SCHOOL EDUCATION.

To All the District Educational Officers in the State.

// FORWARDED :: BY ORDER //

SUPERINTENDENT



# MDM Menus for Primary School Children (5+ to 9+ yr)

### Day 1: Kichidi + Banana

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	100	345.00	6.80	0.50
Green Gram Dhal	20	69.60	4.90	0.40
Green Chilies	5	1.45	0.10	0.03
Ginger	5	3.40	0.11	0.05
Onions	25	12.50	0.30	0.03
Carrot	20	9.60	0.20	0.04
Cooking Oil	5	45.00	-	5.00
Salt (lodized)	2	-	-	-
Curry Leaves	2	2.20	0.12	0.02
Coriander Leaves	3	1.32	0.01	0.02
	Total	490.1	12.54	6.10
Banana <sub>6</sub> *	80	92.80	۰ 0.10	0.24
	Grand Total	582.9	12.64	6.34
Rounded to		583	13	6
Recommended Under MDM		450	12	an T
% Energy	Re	commended	10-15	20-30
% Ellergy	Pre	esent Recipe	8.7	9.8

### Day 2: Rice with Spinach Dhal

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	100	345.00	6.80	0.50
Red Gram Dhal	20	67.00	4.50	0.30
Spinach Leaves	30	7.80	0.60	0.20
Onions	20	10.00	0.24	0.02
Green Chilies	5	1.50	0.10	0.03
Turmeric	0.5	1.70	0.03	0.03
Cumin Seeds	1	3.60	0.20	0.10
Tamarind Pulp	8	22.60	0.24	0.01
Cooking Oil	5	45.00	)	5.00
Salt (lodized)	2	_	-	-
Curry Leaves	2	2.20	0.12	0.02
	Total	506.4	12.83	6.21
Rounded to		506	13	6
Recommended Under MDM		450	12	-
% Energy	Re	commended	10-15	20-30
70 = 110193	Pre	esent Recipe	10.1	11.0

Day 3: Vegetable Rice + Boiled Egg

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	100	345.00	6.80	0.50
Carrots	20	9.60	0.20	0.04
Beans	15	23.70	1.10	0.20
Onions	15	7.50	0.20	0.02
Green Chilies	3	0.90	0.10	0.02
Cooking Oil	5	45.00		5.00
Salt (lodized)	2	-	_	3.00
Curry Leaves	1	1.10	0.06	0.01
Coriander Leaves	1	0.40	0.03	0.01
Mint Leaves	1	0.50	0.05	0.01
	Total	433.7	8.54	5.81
Egg	45	77.80	6.00	6.00
ć.	Grand Total	511.5	14.54	11.81
Rounded to		512	15	12
Recommended Under MDM		450	12	- 12
% Energy	Rec	ommonded	10-15	20-30
70 Energy	Pres	sent Recipe	11.3	20.7

## Day 4: Sambar Rice

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	100	345.00	6.80	0.50
Red Gram Dhal	20	67.00	4.50	0.30
Tomatoes	15	3.00	0.10	0.03
Cucumber	20	2.60	0.10	
Onions	15	7.50	0.10	0.08
Tamarind Pulp	5	14.20	0.20	0.02
Dry Chili Powder	3	7.40	0.50	0.01
Turmeric	0.5	1.70	0.03	0.20
Sambar Powder	1	2.80	0.03	0.02
Cooking Oil	5	45.00	0.20	0.10
Salt (lodized)	2	43.00	-	5.00
Curry Leaves	2	2.20	0.10	0.03
Total		498.4	12.7	6.29
Rounded to		498	13	
Recommended Under MDM		450	12	6
0/ Energy	Rec	ommended	10-15	20.20
% Energy		ent Recipe	10.2	20-30

Day 5: Tamarind Rice/ Pulihora

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	100	345.00	6.80	0.50
Tamarind Pulp	15	42.50	0.50	0.02
Bengal Gram Dhal	5	18.60	1.00	0.30
Black Gram Dhal	5	17.40	1.20	0.10
Groundnuts	10	56.70	2.50	4.00
Dry Chilies	3	7.40	0.50	0.20
Turmeric	0.5	1.70	0.03	0.03
Cooking Oil	5	45.00	-	5.00
Salt(lodized)	2	-	_	-
Curry Leaves	2	2.20	0.12	0.02
	Total	536.5	12.7	10.2
Rounded to		534	13	10
Recommended Under MDM		450	12	
% Energy	Rec	ommended	10-15	20-30
70 Ellergy	Pres	sent Recipe	9.5	17.1

# Day 6: Rice with Amaranth Dhal

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	100	345.00	6.80	0.50
Red Gram Dhal	20	67.00	4.50	0.30
Amaranth Leaves	40	18.00	1.60	0.20
Onions	10	5.04	0.12	0.01
Green Chilies	5	1.50	0.10	0.03
Turmeric	0.5	1.70	0.03	0.03
Cumin Seeds	0.5	1.80	0.10	0.10
Tamarind Pulp	10	28.30	0.31	0.01
Cooking Oil	5	45.00	5.01	5.00
Salt (lodized)	2	-		3.00
Curry Leaves	2	2.20	0.12	0.02
	Total	515.5	13.7	6.2
Rounded to		516	14	6
Recommended Under MDM		450	12	-
% Energy	Rec	ommended	10-15	20-30
3)	Pres	sent Recipe	10.6	10.8

# MDM Menus for Upper Primary School Children (10+ to 15+ yr)

Day 1: Kichidi + Banana

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	150	517.50	10.20	0.80
Green Gram Dhal	30	104.40	7.40	0.40
Green Chilies	5	1.50	0.20	0.03
Ginger	5	3.40	0.10	0.05
Onions	30	15.00	0.40	0.03
Carrot	40	19.20	0.40	0.03
Cooking Oil	7	67.50	5.40	7.50
Salt (lodized)	4	_		7.50
Curry Leaves	4	4.20	0.20	0.04
Coriander Leaves	6	2.60	0.20	0.04
	Total	735.3	19.1	8.97
Banana	80	92.80	0.96	0.24
	<b>Grand Total</b>	828.1	20.06	9.21
Rounded to		828	20	9
Recommended Under MDM		720.0	20.0	-
% Energy	Reco	mmended	10-15	20-30
,, =	Prese	ent Recipe	9.7	10.0

Day 2: Rice with Spinach Dhal

Ingredients Quantity Energy Protein Est					
Ingredients	(g)	Energy (kcal)	Protein (g)	Fat (g)	
Rice	150	517.50	10.20	0.80	
Red Gram Dhal	30	100.50	6.70	0.50	
Spinach Leaves	50	13.00	1.00	0.40	
Onions	25	12.50	0.30	0.03	
Green Chilies	10	3.00	0.40	0.03	
Turmeric	1	35.00	0.60	0.50	
Cumin Seeds	2	7.00	0.40		
Tamarind Pulp	16	45.30	0.50	0.30	
Cooking Oil	7.5	67.50	0.50	0.02	
Salt (lodized)	4	07.00	-	7.50	
Curry Leaves	4	4.20	- 0.00	-	
			0.20	0.04	
Total		805.5	20.3	10.2	
Rounded to		806	20	10	
Recommended Under MDM		720.0	20	**	
% Energy	Reco	mmended	10-15	20-30	
	Prese	ent Recipe	10.1	11.4	

Day 3: Vegetable Rice + Boiled Egg

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	150	517.50	10.20	0.80
Carrots	40	19.20	0.40	0.08
Beans	15	23.70	1.10	0.20
Onions	20	10.00	0.20	0.02
Green Chiles	5	1.50	0.20	0.03
Cooking Oil	7.5	67.50	-	7.50
Salt(Iodized)	1	-		
Curry Leaves	2	2.20	0.10	0.02
Coriander Leaves	2	0.90	0.07	0.02
Mint Leaves	2	1.00	0.10	0.01
	Total	643.5	12.41	8.67
Egg	45	77.80	6.00	6.00
	Grand Total	721.6	. 18.41	14.67
	Rounded to	722	18	15
Recommended Under MDM		720	20	m.
% Energy	Rec	ommended	10-15	20-30
70 Ellergy	Pres	sent Recipe	10.2	18.22

## Day 4: Sambar Rice

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	150	517.5	10.2	0.8
Red Gram Dhal	30	100.5	6.7	0.5
Tomatoes	30	6	0.3	0.06
Cucumber	30	3.9	0.12	0.03
Onions	15	7.5	0.2	0.02
Tamarind Pulp	10	28.3	0.31	0.01
Dry Chili Powder	6	14.8	1	0.4
Turmeric	1	3.5	0.06	0.06
Sambar Powder	2	5.5	0.3	0.2
Cooking Oil	7.5	67.5	-	7.5
Salt (lodized)	4	266	-	
Curry Leaves	4	4.2	0.24	0.04
	759.2	19.4	9.6	
Rounded to		759	19	10
Recommended Under MDM		720	20	-
% Energy	Rec	ommended	10-15	20-30
70 Lifergy	Pres	sent Recipe	10.2	11.4

Day 5: Tamarind Rice / Pulihora

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	150	517.50	10.20	0.80
Tamarind Pulp	30	84.90	0.90	0.03
Bengal Gram Dhal	10	37.20	2.10	0.60
Black Gram Dhal	10	34.70	2.40	0.14
Groundnuts	10	56.70	2.50	4.00
Dry Chilies	6	14.80	1.00	0.40
Turmeric	1	3.50	0.06	0.06
Cooking Oil	7.5	67.50	-	7.50
Salt (lodized)	4	-	-	
Curry Leaves	4	4.20	0.24	0.04
	Total	821.0	19.4	13.6
Rounded to		821	19	14
Recommended Under MDM		720	€ 20	_
% Energy	Red	commended	10-15	20-30
	Pre	sent Recipe	9.5	14.9

### Day 6: Rice Amaranth Dhal

Ingredients	Quantity (g)	Energy (kcal)	Protein (g)	Fat (g)
Rice	150	517.50	10.20	0.80
Red Gram Dhal	30	100.50	6.70	0.50
Amaranth Leaves	60	27.00	2.40	0.30
Onions	15	7.50	0.20	0.02
Green Chilies	10	3.00	0.40	0.06
Turmeric	1	3.50	0.10	0.06
Cumin Seeds	1	3.60	0.20	0.20
Tamarind Pulp	20	56.60	0.60	0.02
Cooking Oil	7.5	67.50	-	7.50
Salt (lodized)	4		_	7.00
Curry Leaves	4	4 20	0.20	0.04
	Total	791.0	21.0	9.5
Rounded to		791	21	10
Recommended Under MDM		720	20	
% Energy	Rec	ommended	10-15	20-30
	Pres	sent Recipe	10.6	10.8

# Local names of food stuffs used in the recipes

S. No.	Name of food Stuff in English	Name of the Food Stuff in Telugu
1	Amaranth Leaves	Thotakoora
2	Banana	Arati Pandu
3	Beans	Beans
4	Black Gram Dhal	Minapa Pappu
5	Carrots	Gajara Gadda
6	Cooking Oil	Vanta Noone
7	Coriander Leaves	Kothimiri
8	Cucumber	Dosa kaya
9	Cumin Seeds	Jilakara
10	Curry Leaves	Karvepaku
11	Dry Chili Powder	Endu Mirapa Kayala Podi
12	Dry Chilies	Endu Mirapa Kayalu
13	Egg	Kodi Guddu
14	Ginger	Allam
15	Green Chilies	Pachi Mirapa Kayalu
16	Green Gram Dhal	Pesara Pappu
17	Groundnuts	Verusenagalu/Palli
18	Mint Leaves	Pudina
19	Onions	Ulli Gadda
20	Red Gram Dhal	Kandi Pappu
21	Rice	Biyamu
22	Salt (lodized)	Iodine Kaligina Podi Uppu
23	Sambar Powder	Sambar Podi
24	Spinach Leaves	Palakoora
25	Tamarind Pulp	Chintapandu Pulusu
26	Tomatoes	Tamatalu
27	Turmeric	Pasupu Podi

### Suggested Pre-cooking and Cooking Methods to Preserve the Nutritive Value

- Foods should be washed well before cutting, cooking and or consumption to remove contaminants like pesticide residues, parasites and other extraneous material
- Wash dry food grains such as rice and pulses once or at the most twice in water before cooking. Repeated washing results in loss of certain vitamins and minerals
- Wash vegetables and fruits before cutting and then cut them into large pieces to minimize the loss of nutrients. Cutting into small pieces will expose greater surface area to the atmosphere resulting in excess loss of nutrients due to oxidation and washing after cutting in addition will result in further loss of water soluble vitamins and minerals in particular
- Do not soak vegetables and fruits in excess water for a long time as most of the vitamins and minerals will leach out into the water and discarding the excess water will therefore lead to greater loss of the water soluble nutrients
- Always cook food in vessels covered with lids to minimize loss of nutrients
- Use only sufficient water for cooking. Do not use excess water particularly in the case of cooking rice, as the excess water is drained off and thereby also the water soluble nutrients
- Do not use baking soda for hastening cooking of pulses or certain vegetables as it would result in loss of vitamins
- Use only sufficient amount of oil for cooking. Repeated heating of leftover used oils will result in formation of peroxides and free radicals that are not good for health
- Also do not mix the already heated oil with fresh oil, instead use them for the process of seasoning. Avoid using such oils again for deep frying
- Encourage and increase the consumption of sprouted food. For eg, sprouted green gram or Bengal gram can be used in the preparation of recipes such as 'Khichidi, Vegetable Rice, Tamarind rice' top improve their nutritive value and palatability.
- In the above recipes, locally available green leaves such as Fenugreek (Mentham koora) or Gogu (Gonkura) can also be used
- Rice may be replaced with Wheat Rava, if desired
- Boiled Egg and Banana can be used alternatively.

### Mutritious recipes suitable for mid day meal programme

The details of nutritional recipes which can be followed for cooking in both SHG and Common Kitchens schools were listed out in the present section so that by taking this food children's nutritional status can be developed better.

#### SUGGESTED RECIPES:

To break the monotony in the menu some low cost and nutritious recipes are suggested below (As per the Lr.RC.No. 160/MDM/2012-2, dated-11-05-2012 of Commissioner & Director of School Education, Andhra Pradesh, Hyderabad)

#### 1-SAMBAR RICE:

<u>Ingredients</u>: Rice, dhal, potato, brinjal, tomato, beans, carrot, sambar powder, salt & tamarind

<u>Preparation</u>: Boil all the vegetables except tomato and keep aside. Boil rice along with dhal. When it is  $cooked \sqrt[3]{4^{th}}$  add the boiled vegetables, tomato, tamarind juice, salt and sambar powder and cook till done. In a separate pan heat some oil and add seasonings. Add this to the cooked mixture.

#### **2-VEGETABLE PULIHORA:**

<u>Ingredients:</u> Rice, tamarind, potato, brinjal, carrot, beans, green chilies, bengal gram (for seasoning), oil, ground nut & seasonings (jeera, mustard)

<u>Preparation</u>: Extract thick juice of tamarind and keep aside. Heat oil in a pan, add seasonings Bengal gram, ground nut, Green chilies and fry well. Add tamarind juice, salt and cook for some time. Add boiled rice to this mixture and mix uniformly.

#### **3-DHAL WITH GREENS:**

<u>Ingredients</u>: Red gram, palak or amaranthus or fenugreek leaves, tamarind, green chilies & seasonings (jeera, mustard, red chilies)

<u>Preparation</u>: Wash the greens thoroughly with sufficient water and chop finely. Boil dhal. When dhal is cooked 3/4<sup>th</sup> add chopped greens and cook till done. Add tamarind juice and mix well. Season the cooked mixture with jeera, mustard and red chilies.

#### 4-KITCHIDI:

<u>Ingredients</u>: Rice, lentils, oil, onions, green chilies, ginger garlic paste, turmeric, garam masala & salt

<u>Preparation</u>: Wash dhal and rice. Boil adding sufficient water. Cook till rice and dhal become tender. Add ginger, garlic paste. Heat oil. Add garam masala, chopped onions, chillies and turmeric. Add enough salt to the rice. Add seasonings and cook for a few minutes for after mixing well.

#### 5- EGG FRIED RICE:

Ingredients: Rice, eggs, onions, salt & pepper powder

<u>Preparation</u>: Wash rice and cook till just soft. Cool rice to separate the grains and keep aside. Heat oil, add sliced onions and fry till golden brown. Add beaten eggs and salt and stir till egg is cooked. Add the rice and sprinkle with pepper powder. Toss to mix. Serve hot garnished with coriander leaves.

#### 6- VEGETABLE BIRYANI:

<u>Ingredients</u>: Basmati rice, beans, peas, carrots, tomato, onion, cinnamon, cardamom, cloves, bay leaf, oil & salt

<u>Preparation</u>: Cut the carrots into long thin pieces. String the beans and cut into one inch pieces. Slice the onions. Wash rice. Heat fat and add sliced onions and fry. Add the chopped vegetables, fry lightly and remove. Add whole garam masala and fry the rice well. Add water and salt and cook. When rice is fully done, make a well in the centre of the rice and add the vegetable mixture, cover and cook on low heat. Mix and garnish before serving.

#### 7- UPMA (VEGETABLE BROKEN RICE):

<u>Ingredients</u>: Semolina/rava, oil, black gram dhal, bengal gram dhal, water, ginger, curry leaves, coriander leaves, green chilies, onion, nuts, mustard seeds, vegetables, vegetables & salt

<u>Preparation</u>: Roast rava and keep aside. Heat oil. Add mustard seeds, dhal, nuts, chopped onions, green chilies, vegetables, curry leaves and ginger and fry. Add water and salt and allow boiling. Add rava gradually and keep stirring. Simmer for few minutes and remove when done.

#### 8- MIXED VEGETABLE CURRY:

<u>Ingredients</u>: Cauliflower, potato, onion, carrot, green chilies, peas, tomato, oil, chilly powder, coriander powder, garlic, ginger, coconut, tamarind, turmeric & salt

<u>Preparation</u>: Cut vegetables into uniform size pieces. Chop onions and slit green chilies. Fry and grind coriander seeds, chilly powder, turmeric, garlic, ginger and coconut. Add prepared vegetables except tomatoes to the fried masala. Fry for 5 minutes. Add salt. Sprinkle water and cook on slow fire till vegetables are done, stirring frequently. Soak tamarind in a small quantity of water extract juice. Add to the cooked vegetables and similar for a few minutes. Remove when slightly thick.

#### 9-VEGETABLE KHURMA:

<u>Ingredients</u>: Potato, beans, peas, carrot, onion, coconut, salt, lime juice, ginger, green chillies, coriander leaves, cardamom, cloves, cinnamon, oil & sugar

<u>Preparation</u>: Wash and cut vegetables into fairly big pieces of uniform size and boil. Grind coriander leaves, coconut, green chilies and half the chopped onion. Roast and powder garam masala. Heat oil and add the masala. Fry well and add boiled vegetables. Allow to boil till gravy is fairly thick. Remove from fire and sprinkle lime juice before serving.

#### 10- EGG ON TOMATO OR SPINACH:

Ingredients: Tomato, onion, ginger, jaggery, chilly powder, eggs, oil & salt

<u>Preparation</u>: Blanch and chop tomatoes or spinach. Peel and chop onion. Grind ginger. Heat fat and brown the onions Add all the ingredients except eggs and Jaggery. Mix well. Cook till vegetables are tender. Spread on a shallow pan. Make slight dents. Break eggs one at a time into the dent. Cover and cook with live coals on top or in oven till eggs are cooked.

#### 11-EGG CURRY:

<u>Ingredients</u>: Eggs, potato, onion, red chilies, coriander seeds, turmeric, vinegar, coconut, salt, cinnamon, cloves, ginger & oil

<u>Preparation</u>: Crack hard boiled eggs and shell them. Keep aside. Peel potatoes, quarter and steep in cold water. Slice onions; roast red chilies, coriander and turmeric. Grind to a fine paste. Chop ginger. Scrape coconut and extract thick and thin extracts. Heat oil and sauté part of the onions. Add masala and fry. Add potatoes and whole spices. Add second extract of coconut milk and salt. Cook till potato pieces are cooked. Prick the eggs and put in the gravy. Add first extract and cook on a low flame. Add vinegar just before removing from fire.

#### Suggested methods of cooking:

#### **Preliminary Preparation**

- Thorough washing in running water to remove dirt, sand, pesticide sprays and micro organisms present in outer layers. Leafy vegetables and vegetables without peeling should be given special attention. Wash before cutting to avoid loss of nutrients.
- 2. Remove all spoiled, discolored portions and highly fibrous stems.
- 3. Remove skin if necessary, scrape the outer layers and avoid discarding edible portions of vegetables as much as possible.
- 4. Use clean sharp knife to avoid discoloration and brushing of the vegetables.

Cut only just before cooking and leave it covered until cooked. If vegetables are
cut into very small pieces the water soluble nutrients are lost to a greater extent
as more surface is exposed.

#### Principles of Cooking Vegetables

- 1. Tender but firm.
- 2. Characteristic color is maintained.
- 3. Pleasant flavour is present.
- 4. Minimum nutrients are lost during preparation and cooking.

#### Cooking Losses of Vitamins and Minerals can be avoided by

- 1. Using only the required amount of water. If excess water is used after cooking the vegetables, the stock can be used for other preparations.
- 2. For green leafy vegetables do not use the cover for first few minutes of cooking. For cabbage and onion, the flavour intensifiés and therefore avoids using lid.
- 3. Do not use baking soda as it destroys thiamine and ascorbic acid.
- 4. Cook the vegetables till tender as over cooking has a destructive effect on the nutrients.
- 5. Boil just enough water and add the prepared vegetables. Cover with lid (expect for greens, onions and cabbage families), boil for few minutes, lower to simmering temperature and cook till done.