

SpectraStar XT-R Calibration Library V3.0

Mar-24

Chocolate		
Substance	Constituents	Sampling Accessories
Chocolate	Fat, Moisture, Sugar, Lactose	US-ISIH-0307 Ring cup
Chocolate - Dark	Moisture, Fat, FFA, Sucrose, Lactose, Milk Fat	US-ISIH-0307 Ring cup
Chocolate - Milk	Moisture, Fat, FFA, Sucrose, Lactose, Milk Fat	US-ISIH-0307 Ring cup
Chocolate - White	Moisture, Fat, FFA, Sucrose, Lactose, Milk Fat	US-ISIH-0307 Ring cup
Cocoa Beans	Moisture	US-LGOP-0001 Large Open Cup with plunger
Cocoa Butter	Iodine Value (IV), FFA	US-LIQK-0003 Liquid Sampling Kit (.5 mm)
Cocoa Liquor	Fat, Moisture	US-ISIH-0307 Ring cup
Cocoa Nibs	Moisture	US-LGOP-0001 Large Open Cup with plunger
Cocoa Powder	Fat, Moisture	US-LGOP-0001 Large Open Cup with plunger
Dairy		
Substance	Constituents	Sampling Accessories
Butter - Salted	Solids, Fat, Salt	US-ISIH-0307 Ring cup
Butter - Unsalted	Solids, Fat	US-ISIH-0307 Ring cup
Butter Milk Powder	Moisture, Fat, Protein	US-LGOP-0001 Large Open Cup with plunger
Cheese - Cheddar	Solids, Fat, Salt, pH	US-LGOP-0001 Large Open Cup with plunger
Cheese - Various	Moisture, Fat, Salt, pH	US-LGOP-0001 Large Open Cup with plunger
Cheese Mix Europe	Moisture, Fat, Protein, Total Solids, Salt, Acidity, pH	US-LGOP-0001 Large Open Cup with plunger
Cottage Cheese	Moisture, Fat, Protein, Acidity	US-LGOP-0001 Large Open Cup with plunger
Custard Powder	Fat	US-LGOP-0001 Large Open Cup with plunger
Ice Cream Mix	Solids, Fat	US-SRCP-0025 Small Round Cup, 25 MM Height
Infant Formula Powder	Moisture, Protein, Fat	US-LGOP-0001 Large Open Cup with plunger
Liquid Milk	Fat, Protein, Carbohydrates, Lactose, Total Solids	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)
Liquid Whey	Protein, Solids, Fat	US-LIQK-0003 Liquid Sampling Kit
Liquid WPC	Protein, Solids	US-LIQK-0003 Liquid Sampling Kit
Margarine	Fat, Salt, pH	US-ISIH-0307 Ring cup
Mayonnaise	Moisture, Fat, pH, Salt, Acidity	US-ISIH-0307 Ring cup
MPC 56	Moisture, Fat, Protein	US-LGOP-0001 Large Open Cup with plunger
MPC 70	Moisture, Fat, Protein	US-LGOP-0001 Large Open Cup with plunger
Processed Cheese	Moisture, Fat, Salt, pH	US-ISIH-0307 Ring cup
Skim Milk Powder	Moisture, Protein, Fat, Lactose	US-LGOP-0001 Large Open Cup with plunger
Sweetened Condensed Milk	Fat, Solids, Sucrose, Protein	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)
Whole Milk Powder	Moisture, Protein, Fat, Lactose	US-LGOP-0001 Large Open Cup with plunger
WPC Powder	Moisture, Fat, Protein	US-LGOP-0001 Large Open Cup with plunger
Feed		
Substance	Constituents	Sampling Accessories
Feed - General	Moisture, Protein, Fat, Fiber, Ash, Ca, P, NaCl	US-LGOP-0001 Large Open Cup with plunger
Corn Cob Mix CCM	Dry Matter, Protein, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger
Feed - Poultry	Moisture, Protein, Fat, Fiber, Ash, Ca, P, Cl, Met, Cys, Met+Cys	US-LGOP-0001 Large Open Cup with plunger
Feed - Swine	Moisture, Protein, Fat, Fiber, Ash, Ca, P, Lysine, NaCl	US-LGOP-0001 Large Open Cup with plunger
Feed Pellets	Moisture, Oil, Protein	US-LGOP-0001 Large Open Cup with plunger
Finished Feed	Moisture, Protein, Fat, Fiber, Ash, Acid Insoluble Ash	US-LGOP-0001 Large Open Cup with plunger
Horse Feed	Moisture, Protein, Fat, Ash	US-LGOP-0001 Large Open Cup with plunger
Flour and Milling		
Substance	Constituents	Sampling Accessories
Flour - Clear	Moisture, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger
Wheat - Ground	Moisture, Protein	US-LGOP-0001 Large Open Cup with plunger
Flour - Hard Wheat	Moisture, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger
Flour - Soft Wheat	Moisture, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger
Wheat Midds	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger
Wheat Seeds	Moisture, Protein	US-LGOP-0001 Large Open Cup with plunger
Wheat Whole Seed	Moisture, Protein, Ash, Gluten	US-LGOP-0001 Large Open Cup with plunger
Yellow Corn Flour	Moisture, Fat, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger
Forage		
Substance	Constituents	Sampling Accessories
Hay - Alfalfa	Moisture, DM, Protein, ADF, NDF, Fat, P, Ca, K, Mg, dNDF48, Ash, Lignin, DP, ADP	US-ISIH-0307 Ring cup
Corn Silage	Moisture, DM, Protein, ADF, NDF, Fat, Ash, Starch, Ca, P, K, Mg	US-ISIH-0307 Ring cup
Corn Silage	Protein, Ash, Fat, Starch, Sugar, Fiber, ADF, ADfom, NDF, NDFom, Enzyme Soluble Organic Matt	US-LGOP-0001 Large Open Cup with plunger



Corn Spent Flake	Oil	US-LGOP-0001 Large Open Cup with plunger
Grass Silage	Dry Matter, Protein, Soluble Protein, Ash, ADF, NDF, Lignine	US-LGOP-0001 Large Open Cup with plunger
Ground Corn	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger
Hay - Grass	Moisture, DM, Protein, ADF, NDF, Fat, P, Ca, K, Mg, dNDF8, Ash, Lignin, DP, ADP	US-ISIH-0307 Ring cup
Hay - Mixed	Moisture, DM, Protein, ADF, NDF, Fat, P, Ca, K, Mg, dNDF48, Ash, Lignin, DP, ADP	US-ISIH-0307 Ring cup
Haylage	Protein, Fiber, Fat, Ash, Ca, P, Moisture, Sugar, pH	US-LGOP-0001 Large Open Cup with plunger
Oat Groats	Moisture, Protein, Fat	US-LGOP-0001 Large Open Cup with plunger
Total Mixed Ration TMR	Moisture, Protein, Fat, Ash, Fiber, Starch, Sugar, ADF, NDF, Lignin, Invitro_Dig, Ca, P, Mg, K	US-LGOP-0001 Large Open Cup with plunger
Olives		
Substance	Constituents	Sampling Accessories
Olives - Crushed	Moisture, Oil	US-LGOP-0001 Large Open Cup with plunger
Olive Oil	Acidity, PV, K270, K232, DK, ST, PA, HE, HA, OL, PA, LN, LI, AR, TS	US-LIQK-0003 Liquid Sampling Kit
Olive Pommace	Moisture, Oil	US-LGOP-0001 Large Open Cup with plunger
Others		
Substance	Constituents	Sampling Accessories
Beef	Moisture, Protein, Fat, Ash, Collagene	US-LGOP-0001 Large Open Cup with plunger
Foods Powders	Moisture, Fat	US-LGOP-0001 Large Open Cup with plunger
Neonatal Milk	Protein, Fat, Carbohydrate, Calculated Calories	US-LIQK-0003 Liquid Sampling Kit
Petfood Dry Kibbles	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger
Raw meat blend	Moisture, Protein, Fat, Ash	US-LGOP-0001 Large Open Cup with plunger
Sausage	Moisture, Fat, Protein, Fat, Salt	US-LGOP-0001 Large Open Cup with plunger
Tobacco	Moisture, Nicotine, Total Sugar, Reducing Sugar	US-LGOP-0001 Large Open Cup with plunger
Raw material		
Substance	Constituents	Sampling Accessories
Bakery by-Product	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger
Barley	Moisture, Protein, Fat, Fiber, Starch, Ins Fiber	US-LGOP-0001 Large Open Cup with plunger
Canola Cake	Moisture, Fat, Protein, Fiber	US-LGOP-0001 Large Open Cup with plunger
Canola Flakes	Oil	US-LGOP-0001 Large Open Cup with plunger
Canola Meal	Moisture, Protein, Oil, Fiber	US-LGOP-0001 Large Open Cup with plunger
Cocoa Cake	Moisture, Fat	US-LGOP-0001 Large Open Cup with plunger
Coconut Meal	Moisture, Protein, Fat, Fiber, Ash, Silicate	US-LGOP-0001 Large Open Cup with plunger
Corn	Moisture, Protein, Fat, Fiber, Ash, NDF, ADF, Starch	US-LGOP-0001 Large Open Cup with plunger
Corn Flour	Moisture, Protein, Oil, Ash, Fiber	US-LGOP-0001 Large Open Cup with plunger
Corn Germ	Moisture, Protein, Oil, Ash, Fiber	US-LGOP-0001 Large Open Cup with plunger
Corn Gluten Feed	Moisture, Protein, Oil, Starch	US-LGOP-0001 Large Open Cup with plunger
Corn Gluten Meal	Moisture, Protein, Oil, Fiber, Ash, Starch	US-LGOP-0001 Large Open Cup with plunger
Corn Meal	Moisture, Protein, Oil, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger
Corn Starch - dry	Moisture, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger
Cotton Seed Flour	Moisture, Oil, Protein	US-LGOP-0001 Large Open Cup with plunger
Cotton Seed Meal	Moisture, Oil, Protein	US-LGOP-0001 Large Open Cup with plunger
Cotton Seed Spent Flake	Moisture, Oil	US-LGOP-0001 Large Open Cup with plunger
Cottonseed Oil	FFA	US-LIQK-0003 Liquid Sampling Kit
Dried Distillers Grains (DDGS)	Moisture, Protein, Oil, Ash, ADF, NDF, Ca, P, DM	US-LGOP-0001 Large Open Cup with plunger
Egg Powder	Moisture, Protein, Fat	US-LGOP-0001 Large Open Cup with plunger
Flax Seeds Unground	Moisture, Oil, Protein, C16:0, C18:0, C18:1, C18:2, C18:3, SATs, IV	US-LGOP-0001 Large Open Cup with plunger
Green Maize	Dry Matter, Protein, Ash, Fat, Starch, Sugar, Fiber, ADFom, NDFom, Enzyme Soluble Organic Matter	US-LGOP-0001 Large Open Cup with plunger
Liquid Starch	Protein, Solids	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)
Malted Barley	Moisture, Protein, Alpha Amylase, Beta Glucan, Diastatic Power, FAN, Sol Protein	US-LGOP-0001 Large Open Cup with plunger
Mustard Flour	Moisture, Protein, Oil, Volatile Oil	US-LGOP-0001 Large Open Cup with plunger
Mustard Seeds	Moisture, Protein, Oil, Palmitic, Stearic, Oleic, Linoleic, Linolenic, Erucic, SATS	US-LGOP-0001 Large Open Cup with plunger
Peanuts	PV, FFA	US-LGOP-0001 Large Open Cup with plunger
Rape Seed (Canola)	Moisture, Protein, Oil, Chlorophyll, Gluco, Oleic, Lenoleic, Erucic, SATS, IV, FFA	US-LGOP-0001 Large Open Cup with plunger
Rice (Brown)	Moisture, Protein	US-LGOP-0001 Large Open Cup with plunger
Rice (White)	Moisture, Protein	US-LGOP-0001 Large Open Cup with plunger
Soybean Meal	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger
Soybeans	Glucose, Fructose, Sucrose, Raffinose, Stachyose	US-LGOP-0001 Large Open Cup with plunger
Soybeans (amino acids)	ASP,THR,SER,GLU,PRO,LAN,GLY,ALA,CYS,VAL,MET,ILE,LEU,TYR,PHE,LYS,HIS,ARG,TRY	US-LGOP-0001 Large Open Cup with plunger
Sunflower Seeds - Ground	Moisture, Protein, Oil, FFA, C160, C180, C181, C182	US-LGOP-0001 Large Open Cup with plunger
Whole Oats	Moisture, Protein, Oil, Beta Glucan	US-LGOP-0001 Large Open Cup with plunger
Whole Peas	Moisture, Protein	US-LGOP-0001 Large Open Cup with plunger
Yeast	Moisture, Fat, Protein, Ash, Fiber	US-ISIH-0307 Ring cup
Rendering		
Substance	Constituents	Sampling Accessories
Animal Proteins	Moisture, Protein, Fat, Ash, Digestibility, Ca	US-LGOP-0001 Large Open Cup with plunger

Blood Meal	Moisture, Protein, Fat, Ash, Ca	US-LGOP-0001 Large Open Cup with plunger
Chicken Viscera Meal	Moisture, Protein, Fat, Ash, Digestibility	US-LGOP-0001 Large Open Cup with plunger
Feather Meal	Moisture, Protein, Fat, Ash, Ca, P	US-LGOP-0001 Large Open Cup with plunger
Fish Meal	Moisture, Protein, Fat, Ash	US-LGOP-0001 Large Open Cup with plunger
Meat & Bone Meal	Moisture, Protein, Fat, Ash, Ca, P, Digestibility	US-LGOP-0001 Large Open Cup with plunger
Pork Meal	Moisture, Protein, Fat, Ash, Fiber	US-LGOP-0001 Large Open Cup with plunger
Poultry Meal	Moisture, Protein, Fat, Ash, Ca, P	US-LGOP-0001 Large Open Cup with plunger
Snack Food		
Substance	Constituents	Sampling Accessories
Caramel	Fat, Solids	US-ISIH-0307 Ring cup
Cookies	Moisture, Fat, Sugar	US-LGOP-0001 Large Open Cup with plunger
Frozen finished French Fries	Moisture, Solids, Oil	US-LGOP-0001 Large Open Cup with plunger
Pasta	Moisture, Protein, Fat, Ash	US-LGOP-0001 Large Open Cup with plunger
Peanut Butter	Fat, Salt, Color	US-ISIH-0307 Ring cup
Pita Chips	Moisture, Oil	US-LGOP-0001 Large Open Cup with plunger
Potato Chips	Moisture, Oil	US-LGOP-0001 Large Open Cup with plunger
Potatoes - Raw/Dried	Moisture, Solids	US-LGOP-0001 Large Open Cup with plunger
Tortilla Chips	Moisture, Oil	US-LGOP-0001 Large Open Cup with plunger

Glossary

Constituent	Definition
Acid Detergent Fiber (ADF)	The fibrous component represents the least digestible fiber portion of forage or other roughage
Acid Detergent Protein (ADP)	The insoluble protein fraction
Acidity	The level of acid in substances such as water, soil, or wine
Alanine (ALA)	Amino Acid
Alpha Amylase	Enzyme that catalyze the hydrolysis of the internal α -1,4-glycosidic linkages in starch
Alveo P	Maximum pressure required for the deformation of the sample or overpressure
Alveo W	Indicates dough baking strength
Arachidic	Fatty Acid
Arginine (ARG)	Amino Acid
Ash	The residue containing inorganic mineral elements of a feed sample
Aspartic	Amino Acid
Beta Glucan	One form of soluble dietary fiber that's strongly linked to improving cholesterol levels and boosting heart health
Calcium (Ca)	Essential mineral
Calories	Calorie is a unit of measurement for energy
Carbohydrates	Biochemical compounds composed only of the elements carbon, hydrogen and oxygen, and are the main source of energy for animals
Color B	Yellow to Blue color axis
Cysteine (CYS)	Amino Acid
Dev Time	Classification for water absorption in flour
Diastatic Power	A measurement of a malted grain's enzymatic content
Digestability	Measure of nutrition a food provides in a given volume. It indicates how much of the food is absorbed by the gut into the bloodstream
Digestible Protein (DP)	Measure of how well the proteins are digested
DK	index DK is a criterion of discrimination between a bad quality virgin olive oil and a virgin olive oil adulterated with refined olive oil
Dry Matter (DM)	A measurement of a sample with all volatiles removed
Erucic	Fatty Acid
Fat/Oil	The term often refers specifically to triglycerides, that are the main components of vegetable oils and of fatty tissue in animals
Fiber	The insoluble residue of an acid hydrolysis followed by an alkaline one
Free Fatty Acids (FFA)	Are produced by the hydrolysis of oils and fats
Fructose	A common sugar
Glucose	A common sugar
Glutamic (GLU)	Amino Acid
Glycine (GLY)	Amino Acid
Heptadecanoic	Fatty Acid
Histidine (HIS)	Amino Acid
Insoluble Fiber	Refers to all the parts of plant-based foods that cannot be digested or absorbed by the body
Insoluble Fiber	All the parts of plant-based foods that cannot be digested or absorbed by the body
Iodine Value (IV)	Mass of iodine in grams consumed per 100 grams of a chemical substance, often used to determine the amount of unsaturation in fats, oils and waxes
Isoleucine (ILE)	Amino Acid
K232	A delicate indicator of oxidation in oils
K270	Detects the level of adulteration, blends with refined olive oil
Lactose	A large sugar molecule that is made up of two smaller sugar molecules, glucose and galactose
Lenoleic	Fatty Acid
Lenolinic	Fatty Acid
Lignin	A complex organic polymer deposited in the cell walls of many plants, making them rigid and woody

Lysine (LYS)	Amino Acid
Magnesium (Mg)	Essential mineral
Methionine (MET)	Amino Acid
Moisture	Total amount of bound and unbound water contained in a sample
Neutral Detergent Fiber (NDF)	Measures most of the structural components in plant cells (i.e. lignin, hemicellulose and cellulose), but not pectin
Neutral Detergent Fiber Digestibility 48 (dNDF48)	This method mimics rumen digestion. The forage sample is dried, ground and incubated in rumen fluid for 48 hours
Oleic	Fatty Acid
Palmitic	Fatty Acid
Peroxide Value (PV)	Gives the initial evidence of rancidity in unsaturated fats and oils
Phenylalanine (PHE)	Amino Acid
Phosphorus (P)	Essential mineral
Polarity (POL)	An approximate measure of the sucrose content of the sugar
Pottasium (K)	Essential mineral
Proline (PRO)	Amino Acid
Protein	Organic compounds composed of building blocks called amino acids
pH	Quantitative measure of the acidity or basicity of aqueous or other liquid solutions
Purity	Purity=(pol/rds)*100 Used to determine value of sugar beets to pay farmers
Raffinose	A trisaccharide composed of galactose, glucose, and fructose
RDS	Measurement of total dissolved solids in a sugar liquor
RWST	Recoverable white sucrose per ton
Salt (NaCl)	Mineral Sodium Chloride
Saturated Fat	A saturated fat is a fat or fatty acid in which there are no double bonds between the carbon atoms of the fatty acid chain
Serine (SER)	Amino Acid
Solids	A measurement of the amount of solid substance contained in a liquid sample
Stachyose	A tetrasaccharide consisting of two α -D-galactose units, one α -D-glucose unit, and one β -D-fructose unit sequentially linked as galgalglcfru
Starch	A white, granular, organic chemical that is produced by all green plants
Stearic	Fatty Acid
Sucrose	A common sugar
Suger	Also called monosaccharides, include glucose, fructose, and galactose
Threonine (THR)	Amino Acid
Tryptophan (TRP)	Amino Acid
Tyrosine (TYR)	Amino Acid
Valine (VAL)	Amino Acid
Water ABS	The amount of water taken up by flour to achieve the desired consistency and create a quality end-product