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The current issue of the Cruciferae Newsletter (vol. 37) is published online from the Brassica website (<http://www.brassica.info/info/publications/cruciferae-newsletter.php>). The present issue contains 6 contributions in three different topics: Agronomy and variety trial; Breeding strategies and General information on Brassica. Members of the editing board would like to acknowledge the authors for the quality of their contributions. For future issues, we would be grateful if all the authors could read and follow carefully the author recommendations before submitting their manuscript, in order to facilitate the editing process. In particular, it is necessary to mention one of the listed topics that is the most relevant to the presented work (see the list at the end of the present issue).

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FEW LINES FROM *LE ROBERT CRUCIFÈRE*: BOTANICAL, AGRONOMIC AND COMMON NAMES RELATING TO *BRASSICA NAPUS*

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Introduction: *Brassica napus*

The most significant contemporary cultivated species in the family *Brassicaceae* Burnett (syn. *Cruciferae* Juss.) is *Brassica napus* L., which is grown on 33,708,547 ha on a global scale, followed far behind by *B. oleracea* L. subtaxa and cultivar groups and mustards (*Brassica* spp. and *Sinapis* spp.), all together with slightly above 4,5 million ha, in 2016 (FAOSTAT 2017). Its primary centre of diversity is the Mediterranean (Zeven & Zhukovsky 1975), having widespread across the world and becoming most extensively produced in with Canada and China, with almost 18.5 t and more than 15 t, respectively (Chai et al. 2017, Phillips 2018). Resulting from the fusion of the whole genomes of *B. oleracea* ($2n = 9$) and *B. rapa* ($2n = 10$), *B. napus* is considered an amphidiploid (Li et al. 2017).

A considerable variability of morphological and quality traits may have caused a number of synonyms in various taxonomic classifications, such as *B. gongylodes* Mill., *B. napobrassica* Mill., *B. oleifera* Moench nom. illeg., *B. praecox* Kit. ex Hornem., *B. praecox* Waldst. & Kit. ex DC., *B. rutabaga* DC. ex H.Lév., *B. rutabaga* (DC.) Druce, *B. stricta* Nestl. ex DC. or *C. napus* E. H. L. Krause (The Plant List 2013). The Linnean species name, *nāpus* (Linnaeus 1753, Linnaeus 1758), is a Latin noun, which is derived from the Ancient Greek *nāpu*, denoting mustards. The synonym of the latter is *sīnapi*, being, in its own turn, a borrowing of the Demotic *snwpt*, both referring to the same crops (Erichen 1954, Wiktionary 2018). Since the historical linguistic database of both Egyptian and Proto-Afroasiatic, its direct ancestor that was spoken at most 18,000 years ago, is rather abundant, there are many potential candidates for the ultimate origin of the modern scientific *sinapis*. One pair is the Egyptian *sm.w*, designating a cruciferous vegetable, and the Proto-Afroasiatic **sayam*, denoting grass, while another is the Egyptian *sn.w*, associated with a kind of ritual food, and the Proto-Afroasiatic **sVny/-*, referring to seed and corn (Militarev 2005, Militarev & Stolbova 2007).

This overview is aimed at presenting the subspecies, varieties, forms, cultivar groups and common names relating to *B. napus* (Porcher 2008, The Plant List 2013, Wiersema & León 2016, Erić et al. 2017, Kew Science 2017, Logos 2018, NPGS 2018, Wikipedia 2018, Wiktionary 2018).

B. napus* subsp. *napus

Brassica napus L. subsp. *napus*. As one of two subspecies of *B. napus*, it comprises two botanical varieties, which differ both in their above- and underground morphology and the way they are used (Chalhoub et al. 2014). The term *rapeseed* is the most widely used to denote not only this subspecies, but also the entire species *B. napus*, consisting of two segments, with *rape* derived from the Latin *rapa*, denoting a cruciferous plant with transformed root, and *seed*, associating that its most common use is for mature seeds. The vernacular names in the languages of the world are quite numerous and diverse (Table 1).

Table 1. Cultivar groups and common names relating to *Brassica napus* subsp. *napus*

Cultivar Group	Language	Name
Rapeseed	Afrikaans	koolzaad
	Albanian	kolzë
	Amharic	'aša; zebībi
	Arabic	albjm; alshjm;alsjm; alsjm
	Armenian	sevuk
	Asturian	colza; nabu; raps
	Azerbaijani	raps
	Bashkir	kol'za; raps
	Basque	koltza
	Belarusian	raps
	Bengali	rā'isariṣā
	Bergamasque	raisù
	Bosniak	repica; uljana repica
	Breton	kolza
	Bulgarian	kanola; rapitsa
	Catalan	colea; colza
	Chinese (Cantonese)	yau choy
	Chinese (Mandarin)	ou zhou you cai; yang you cai; yóucài
	Chuvash	rapsă
	Corsican	colza
	Croatian	uljana repica
	Czech	brukev řepka; brukev řepka olejka; řepka olejka
	Danish	raps
	Dutch	koolzaad
	English	Argentine canola; canola; cole; colewort; colza; oilseed rape; rape
	Erzya	reps
	Esperanto	kolzo; napo
	Estonian	õlikaalikas; raps
	Finnish	kaalirapsi; rapsi
	Flemish	koolzoad
	Franco-Provençal (Forez)	crouéza
	French	chou colza; colza; navette
	Friulian	râf
	Frisian (West)	raps
	Galician	colza
	Georgian	rapsi
	German	Lewat; Raps; Reps
	Greek	elaiokrámvi; kramvogoungúlia; soudiká goungúlia
	Gujarati	balatkar
	Haitian Creole	kolza
	Hawaiian	ho'opi'i
	Hebrew	chrvv hnfvs; lefatit
Hindi	balatkar; kainola	
Hungarian	repce	
Icelandic	repja	
Ido	nabeto	
Indonesian	canola; kanola; minyak rapa; rapa	
Irish	ráib	
Italian	cavolo colza; colza; navone; napo oleifera; ravizzone	
Japanese	seiyō-aburana	
Kannada	atyachar	
Kazakh	raps	
Kyrgyz	raps	
Korean	yuchae	
Lao	phad aepng	
Latvian	rapsis	

Lithuanian	rapsas; sėjamasis rapsas
Lombard (Western)	ravetton; raviscion; ravuscion
Maltese	kolza
Manx	reap; napin Soolynagh
Marathi	kōlā
Mari (Hill)	şăpkə n
Mongolian	raps
Norwegian (Bokmål)	raps
Norwegian (Nynorsk)	raps
Oléronese	colzat'
Persian	k'lza
Picard	colzâ; coseu; cossâ; cossas; cosso; cossas; golza; goza; gozâ; gouza; gozeukosa; kolza; koseu; koso; koulza; kouseu; kouzo; sainse; sinse; navé; navioe; navyeu; navyo
Polish	kapusta rzepak; rzepak
Pont-Audemereese	chou; crambé; ravison
Portuguese	colza; couve-nabiça
Punjabi	kōlā
Romagnol	colsât
Romanian	rapitâ
Russian	kol'za; raps
Samogitian	rapsos
Sardinian (Campidanese)	raba; rava
Scots	raps
Seine-Maritime	cossar; cossard
Serbian	kupusna uljana repica; uljana repica
Sinhalese	kolāva
Slovak	repka; repka olejná
Slovenian	repna ogrščica; oljna ogrščica
Sorbian (Upper)	rěpik
Spanish	ajenabe; ajenabo; colinabo; colza; jenabe; jenable; jenape; jábena; mostaza negra; naba; nabestro; nabieyo; nabilla; nabillo; nabina; nabiza; nabizo; nabo; nabo agreste; nabo blanco de Granada; nabo colza; nabo común; nabo de Castilla; nabo de Fuencarral; nabo de comer; nabo forrajero; nabo gallego; nabo largo; nabo luengo y delgado; nabo prolongado; nabo silvestre; nabos blancos; nabresto; nabu; napo; ñabiza; ñabo; ñabu; rabanillo;raps
Swedish	raps
Tatar	raps
Thai	Phạk kąd Kăn khāw
Tibetan	snum tshal
Turkish	kanola; kolza
Udmurt	raps
Ukrainian	raps; ripak; svyripa
Uzbek	raps
Vietnamese	cải dầu
Walloon	golzâ
Welsh	rêp; rêp had olew
Yiddish	kanala

One of the most frequent vernacular names denoting *B. napus* subsp. *napus*, present in the Indo-European languages, such as Breton, English, French, Persian or Russian, are based upon the Dutch name referring to the same crop, *koolzaad*, and originally meaning *cabbage seed*. In more or less transformed form, it was borrowed by the Afroasiatic, with Maltese, the Altaic, with Turkish, and the Dené-Caucasian, with Basque, as well as in the creole, with Haitian Creole, and constructed languages, with Esperanto (Table 1). The first part of this complex Dutch word evolved from the Latin *caulis*, associated with aboveground shoots, stalks or stems, especially among the crucifers, as reported by the Roman historian and agriculturalist Cato the Elder (Lewis & Short 1879). The ultimate source of *caulis*, along with the Proto-Balto-Slavic *káu'las*, the Ancient Greek *kaulós* and the Sanskrit *kulyā*, is the Proto-Indo-European **kaw(ə)l* or **kowos*, meaning *pipe-like* or *tubular bone* (Nikolayev 2012, Wiktionary 2018).

The Chinese words in all its dialects are based upon the noun denoting simply a vegetable, such as the Cantonese *choy* and the Mandarin *cai*, with the exports in the neighbouring languages, as seen in Vietnamese (Table 1).

B. napus L. subsp. *napus* var. *napus*. The first variety of *B. napus* subsp. *napus* is cultivated exclusively for oil-rich seed production (Fig. 1, top row). Its common names in an extremely vast majority of the world languages and dialects are identical to those referring to the very subspecies (Table 1).

Brassica napus L. subsp. *napus* f. *annua* (Schübl. & G. Martens) Thell. The form with a growing season is considered annual because it lasts during one year (Koscielny et al. 2018) and is typical for both cooler and warmer temperate continental environments (Fig. 1, middle row, left). Its common names are, in fact, the same as those designating *subsp. napus* and *var. napus*, enriched with an adjective in local languages pointing that it is sown in spring or that it grows during summer (Table 2).

Table 2. Cultivar groups and common names relating to *B. napus* subsp. *napus* var. *napus* f. *annua*

Cultivar Group	Language	Name
Annual Rapeseed	Dutch	zomerkoolzaad
Annual Rapeseed	English	annual rape; summer rape
Annual Rapeseed	French	colza d'été; colza de printemps
Annual Rapeseed	German	Sommerraps
Annual Rapeseed	Indonesian	semusim rapa
Annual Rapeseed	Polish	rzepak jednoroczny
Annual Rapeseed	Russian	raps iarovoi
Annual Rapeseed	Serbian	jara uljana repica
Annual Rapeseed	Slovak	repka olejná jarná
Annual Rapeseed	Ukrainian	kol'za; ripak iaryi

B. napus L. subsp. *napus* var. *napus* f. *napus*. Another form of the variety *napus* is more present in the regions with cooler climate (Bouchet et al. 2014), although some breeding modifications may enable its reliable cultivation in warmer regions (Paridaen & Kirkegaard 2015; Fig. 1, middle row, right). Similarly to f. *annua*, the common names in diverse languages denoting f. *napus* are based on those referring to *subsp. napus* and the *napus* with the added adjectives referring to winter (Table 3). The English name for f. *napus* is distinct from those associated with another, but akin, species, *Brassica rapa* L.

Table 3. Cultivar groups and common names relating to *B. napus* subsp. *napus* var. *napus* f. *napus*

Cultivar Group	Language	Name
Biennial Rapeseed	Dutch	bladkool; winterkoolzaad
Biennial Rapeseed	English	swede rape
Biennial Rapeseed	Esperanto	kolzo
Biennial Rapeseed	French	colza d'hiver
Biennial Rapeseed	German	Winterraps
Biennial Rapeseed	Indonesian	dwimusim rapa

Biennial Rapeseed	Polish	rzepak dwuroczny
Biennial Rapeseed	Russian	raps ozimyi
Biennial Rapeseed	Serbian	ozima uljana repica
Biennial Rapeseed	Slovak	repka olejná ozimná
Biennial Rapeseed	Ukrainian	ripak ozymyi



Figure 1. Cultivars groups *Brassica napus*: (upper row) rapessed in Le Rheu, Bretagne, France; (middle row, left) annual rapeseed in the county of Luoping, Yunnan, China; (middle row, right) biennial rapeseed in Philpot, Kentucky, USA; (lower row, left) kale in Monticello, New York, USA; (lower row, right), rutabaga in Dotnuva, Lithuania

B. napus L. subsp. *napus* var. *pabularia* (DC). Alef. This variety of subsp. *napus* is grown for fresh leaf production and the use in both human diets, as salad, and animal nutrition, in the form of forage. Recently, it has achieved a rapid increase in many regional markets, such as USA (Amsden et al. 2017). Its rare local common names associate this crop to a cruciferous plant, to some of its morphological peculiarities and similarities to other vegetables (Fig. 1, bottom row, left), to the act of cutting or mowing and to the cool climate geographic categories, such as Hanover or Siberia (Table 4).

Table 4. Cultivar groups and common names relating to *B. napus* subsp. *napus* var. *pabularia*

Cultivar Group	Language	Name
Kale	English	asparagus kale; Hanover-salad; hungry gap kale; rape kale; Siberian kale
Kale	French	chou à faucher
Kale	German	Schnittkohl
Kale	Polish	rzepa nasiowa
Kale	Portuguese	couve-nabiça
Kale	Spanish	nabicol

B. napus* subsp. *rapifera

B. napus L. subsp. *rapifera* Metzg. is labelled by both breeders and agronomist as Rutabaga and is grown primarily for its rich and nutrient-rich roots, suitable to be used as a winter feed (Fig. 1, bottom row, right). This important crop, especially in northern climates, is also a novel source of antioxidants (Pasko et al. 2013).

The common name *rutabaga* has its origin in Västgötska, a dialect of Swedish language, spoken in the western parts of the country. More precisely, it is its complex word denoting subsp. *rutabaga*, which has a descriptive nature and literally means *baggy root*. In a more or less corrupted form, this word is present in many common names across the world, from Västergötland to Indonesia and from Haiti to Korea (Table 5).

Table 5. Cultivar groups and common names relating to *B. napus* subsp. *rapifera*

Cultivar Group	Language	Name
Rutabaga	Arabic	lft swidi
	Armenian	gongegh
	Asturian	colinabu; naba; nabicol; nabu forrajero; rutabaga
	Bashkir	brjukva
	Basque	arbi-aza
	Belarusian	bručka
	Breton	irvinenn-saoz
	Catalan	colinap
	Cheyenne	heóvemo'óhta'e
	Chinese (Cantonese)	ruidián dàtóucài
	Chinese (Mandarin)	da tou cai; man jing gan lan; wu jing gan lan
	Croatian	čepovača; podzemna koraba; stočna koraba; švedska repa
	Czech	brukev řepka tuřín; kolník
	Danish	kålraabi; kálroe
	Dutch	knolraap; koolraap
	English	rutabaga; swede; Swedish turnip; winter rape
	English, Ireland	swede
	English (Isle of Man)	moot
	English, Northern England	swede
	English, Scotland	swede
	English (USA)	rutabaga
	Esperanto	napo
	Estonian	kaalikas
	Finnish	lanttu
	French	chou-navet; navet de Suède; rutabaga
	French (Quebec)	navet jaune
	Frisian (Saterland)	Stákräiwe
	Frisian (West)	güül rōōw; kualrōōw; bōderrōōw; steegrōōw
	Friulian	verzerave
	German	Bodenkohlrabi; Butterrübe; Erdkohlrabi; Kohlrübe; Runke; Runkelrübe; Steckerübe; Schwedische Rübe; Unterkohlrabi
	German (Austria)	Dotsche
	Haitian Creole	rutabaga
	Hungary	karalábé; karórépa
	Icelandic	gulrófa; rófa
	Indonesian	rutabaga
	Irish	svaeid
	Italian	cavolo navone; navone; navone da forragio; rutabaga
	Japanese	rutabaga; suwhēden-kabu
	Jèrriais	saidiche; suidiche
	Jurassien	choux-rave
Kashubian	wrëk	
Kazakh	asxanaliq tarna; tarna	
Komi	galanka	
Korean	lutabaga	

Kurdish (Northern)	şêlim
Lithuanian	griežtis
Low German	Wruke
Mari (Hill)	uşman
Mari (Meadow)	čungəla
Mongolian	manjin
Navajo	tséyaa hataalı́
Norman	sudiche
Norwegian (Bokmål)	kálrabi; kálrot
Norwegian (Nynorsk)	kálrabi; kálrot
Ossetian	urs cæxæra; urs khuymbyl; xydyr bulkh
Persian	shlghm zrd
Picard	chounavioe; patagá; tabagá
Piedmontese	ratabach
Polish	brukiew; karpieł
Portuguese	couve-nabo; nabo; rutabaga
Russian	briukva
Samogitian	sietėnis; sietėnis
Scanian	rabba
Scots	neep; swade
Scots, Southern	tumshie
Serbian	broskva; koraba; podzemna koraba
Sorbian (Upper)	kulirěpa; prawa kulirěpa
Spanish	colinabo; nabo; nabo de Suecia; nabo forrajero; nabo sueco; rutabaga
Swedish	kálraps; kálrot
Swiss German	Knutsche
Tagalog	dilaw na singkamas; dilaw na turnip; rutabaga; singkamas ng Suwesya; Suwekong singkamas; Suwekong turnip; turnip ng Suwesya
Tatar	bryukva
Tuvan	brükva
Udmurt	kaljaga
Uzbek	bryukva
Västgötska	rotabagge
Vietnamese	cải củ Thụy Điển
Welsh	rwden

It is noteworthy that numerous Slavic languages has almost identical vernacular names for this crop, such as in Belarusian, Czech or Serbian, as well as in the neighbouring non-Slavic languages, with the Altaic Bashkir, Tatar, Tuvan or Uzbek (Table 5). The etymology of the assumed initial form, **bruky*, is quite interesting (Vasmer 1953): it came from the Low German *wrūke*, which, in its turn, is an outcome of the evolution of the Latin *brassica eruca*, today classified as *Eruca sativa* Mill. Originally, the Latin *eruca* is considered a name for a cruciferous plant used as a vegetable and has its definite origin in the Proto-Indo-European **ǵʰers*, literally meaning *to bristle* and having a still insufficiently unexplained descriptive character (Wiktionary 2018). The remaining common names denoting rutabaga are mainly based upon the aforementioned Latin terms *caulis*, *napus* and *rapa* (Table 5).

Conclusions

The existing variability of morphological characteristics of the taxa of the species *B. napus* may be regarded as rather broad. It offers two main directions of the crop improvement, one for grain production and oil extraction and another for animal nutrition and developing the varieties with fleshy roots of desirable chemical composition and other quality traits. Its added value is its role in the form of so-called *superfood* as a leafy vegetable. Studying the collected data considering common names denoting all these biological categories may both reveal more about its past and say a lot about its place in many local (agri)cultures of various linguistic ethnolinguistic families.

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