ENGLISH BORROWINGS IN THE CROATIAN SUSTAINABLE AGRICULTURE TERMINOLOGY

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Abstract. Sustainable agriculture development has been recently much concerned. In this context “sustainability” can be defined as a way by which biological systems remain different and productive. Namely, it advocates reduction or completely exclusion of synthetic chemical agents. Since this production system, generally designated as sustainable or organic farming, has become world wide trend its terminology analysis requirement has been occurred. Due to the fact that agriculture sustainability originated from English speaking countries terms for new notions in the Croatian language have been mostly borrowed from the English language. English borrowings in the context of the sustainable agriculture will be analysed in this paper aiming to determine structure and meaning of the terms as well as possible replacement by the domestic (Croatian) terms. This will both make easier understanding such terminology to our students and contribute to the Croatian language standard concern.

Keywords: Croatian language, English borrowings, sustainable agriculture, word formation

INTRODUCTION

We are witnesses that not only farmers talk about sustainable agriculture but others concerning safe food. It is related to a newly established agriculture production system that will be economically equal or approximately efficient and less environment risky. Thus, broader public, non-governmental organizations, producers and consumers participate in the discussion on organic agriculture aims serving as argumentation for new technological and economic orientation. Also, the strategy program of the scientific research (2014-2018 p.3) of the Faculty of Agriculture in Osijek (Croatia) included sustainable agriculture as the priority research field of the Faculty aiming at high quality food production.

So, terminology of this relatively new field of interest is becoming interesting not only to experts but linguists as well. Even professor Ritz (1995:6), an agricultural engineer has, in his Agronomic dictionary foreword, pointed out that „there is a worldwide need for the new farming production system održiva or organska poljoprivreda (sustainable or organic farming) whereby synthetic chemical means use is reduced or completely neglected. Thus, “very soon, there will be need for the Dictionary to be expended by the terms from this area (translation by the author). There are many terms naming the above mentioned. Thus, 1920s are known for the term „biodinamička poljoprivreda“ (biodynamic agriculture) after the antropozophy (human wisdom) founder Rudolf Steineru (Cifrić, 2003), and 30s „organska poljoprivreda“ (organic agriculture). The concept „ekologijska poljoprivreda“ (ecological agriculture) was also used.

Almost each expression naming sustainable agriculture contains at least one word of the foreign origin. Why? Agriculture technology as well as accompanying terms have derived from English speaking countries, primarily England and USA. Adopting foreign technology and having no time to create our own terms we “borrow” foreign terms as well. According to Filipoviću (1990), Croatian linguist, such terms are called “anglicisms”
whereas Mihaljević, M. (1994) advocates “anglisms”. Filipović says that they also include „technical terms naming findings or scientific discoveries…” “derived from Latin or Greek words and adapted by the English language rules. These words occurred in those civilisations aiming to meet needs for the new words filling empty spaces in the vocabulary. Since they have been formed and first used in the English language, they are classified as anglicisms.” They can also be called “internationalisms or europeisms” as they are found in almost all languages.

**MATERIALS AND METHODS**

Our corpus consists of 44 expressions (one or more words) naming sustainable agriculture and contain at least one anglism (English assimilated loan words or not assimilated by the Croatian language rules): agrobioraznolikost (agrobiodiversity), Agrobiodiverzitet, Agroekologija (agroecology), alternativna poljoprivreda (alternative agriculture), biointenzivna poljoprivreda (biointensive agriculture), biološka (ekološka) organska proizvodnja (biological – ecologica l- organic production, biološko dinamična poljoprivreda (biological dynamic agriculture), biološko-dinamična poljoprivreda (hyphenated), biokontrola (biocontrol), biodiverzitet (biodiversity), bioraznolikost (biodiversity), biodinamika (biodynamics), biotehnologija (biotechnology), bio vrt (biogarden), biosigurnost (biosecurity), biosigurnosne mjere (biosecurity measures), eko proizvodnja (eco production), ekološka poljoprivreda (ecological agriculture), ekološka mreža (ecological network), eko poduzetnik (eco-entrepreneur or ecopreneurist (ecopreneurist.com-blog), eko proizvodnja (eco-production or eco production), ekodizajn (ecodesign or eco-design or eco design), integriran poljoprivredna proizvodnja (integrated agricultural production), konzervacijska obrada tla (conservation tillage), lokalna (tradicionalna) proizvodnja (local (traditional) production, "Low-input" poljoprivreda (Low-input farming systems), minimalna obrada tla (minimum tillage), minimum tillage (minimum tillage), mulch till (mulch till), Naturalna poljoprivreda (natural farming), no till (no till), no tillage (No tillage), organska poljoprivreda (organic production), organska poljoprivreda (organic agriculture), permakultura (permaculture), precizna poljoprivreda (precision agriculture), prirodni resursi (natural resources), Racionalna obrada tla (rational tillage), reducirana obrada tla (reduced tillage), regenerativna poljoprivreda (regenerative agriculture), ridge till (ridge till), strip tillage (strip-tillage). Structure and meaning of the above mentioned expressions have been analysed aiming to see whether there are some new trends in modern agricultural terminology and if there is possibility to replace English borrowings (internationalisms).

**RESULTS AND DISCUSSION**

Of the total of 44 expressions designating concepts related to sustainable agriculture practice 11 consisted of one word (25%), 22 of two words (50%) and 11 of more than two (25%). See figure 1.
Fig. 1 Expressions related to sustainable agriculture

English borrowings can be categorized into:
- assimilated ones in the Croatian language: (28)
- non-assimilated into the Croatian language: (13)

*The number is not equal to the one designating total number of expressions since one expression can have more borrowings.

Nineteen words are formed by means of combining **forms** (“a linguistic form that occurs only in combination with other for not specifying the placement before or after the element to which the for is attached (W), or as “a bound form (or bound morpheme) used in conjunction with another linguistic element in the formation of a word” (Chalker and Weiner, 1994). Whereas 24 are **compounds** consisting of two or more elements. These numbers indicate high degree of productivity by combining forms in the sustainable agriculture field.

Talking about the language elements **agro**, **bio**, **eko**, **no**, **perma** there are different terminological uneveness requiring orthographic standardisation. According to Babić (2002:37) these are **vezane osnove (bound forms)**, that do not occur as independent word forms but only in compounds formations and prefixed verb formations as parts and derived words such as: **aero**, **auto**, (aerodinamika (aerodynamics, auto induction). The same elements are called by Barić (1980) **vezani leksički morfemi (bound lexical morphemes)**. Hrvatski jezični savjetnik (Croatian Language Adviso, 1999) uses examples **makro**-(macro-) **makrokozmos** (macrocosmos) and **-logija (-logy** (terminologija (terminolog)) aiming to explain that these are bound lexical morphemes mostly originated from Latin or Greek languages. Some of them are formed by adjective shortening such as **eko**-(eco-) from ecological. Silić & Pranjković (2005:153) state that the above mentioned elements are prefixoids (e.t. word parts placing in front of the word root) and behave as prefixes whereas suffixoids are located behind the word root functioning as suffixes. Klajn (Horvat, Štebih-Golub, 2010) says that prefix differs from prefixoid since the latter” has the whole words meaning“, unlike prefixes having only “relation meaning“. Milica Mihaljević and Ermina Ramadanović (2006) explain that these **prefixoids** determine complete meaning of the bound forms added in front of the form or word forming a new derived word while **suffixoids** determine lexical bound forms added behind stem or word forming new derived word.

Although, in some cases, prefixoids can be even independent nouns such as in the example: **Mi smo više eko nego naši roditelji** (We are more eco than our parents used to be), in our corpus it is obvious that prefixoids are combined with:
- **loan words** (agrobiodiverzitet (agrobiodiversity), Agroekologija (agroecology), biokontrola (biocontrol), Biodiverzitet (biodiversity)) etc. or
3.1. Writing of orthographically assimilated/non-loan words in the corpus:

Derived words are written with prefixoids as:

a) one word: agrobiodiverzitet, agrobioraznolikost, agroekologija, biokontrola, biodiverzitet, bioraznolikost, biodinamika, biotehnologija, biosigurnost, biosigurnosne, ekodizajn,

b) hyphenated word: eko-proizvodnja, low-input

c) separated words: eko poduzetnik, eko proizvodnja, bio vrt.

Fig. 2. Discrepancy in writing prefixoids

Concepts designating a sustainable agriculture are as follows:
A) Words derived from prefixoids (11);
B) Expressions consisted of two or more words (31).

Words formed by prefixoids:

- **agrobiodiverzitet** (agrobiodiversity) is formed with prefixoid **agro-** (Greek. agros = cultivated land) designating bond with a land, and is used for compounds formation, + prefixoid **bio-** „a combining form meaning ‘life’ occurring in loanwords from Greek and used in the formation of compound words’ + **diversity** ‘the state or fact of being diverse’) is defined as ‘a fundamental feature of farming systems around the world’ encompassing many types of biological resources tied to agriculture, such as: genetic resources (the essential living materials of plants and animals); edible plants and crops (including traditional varieties, cultivars, hybrids, and other genetic material developed breeders); livestock (small and large, lineal breeds or thoroughbreds) and freshwater fish; soil organisms vital to soil fertility, structure, quality, and soil health; naturally occurring insects, bacteria, and fungi that control insect pests and diseases of domesticated plants and animals; agroecosystem components and types (poly-cultural/monocultural, small/large scale, rain fed/irrigated, etc.) indispensable for nutrient cycling, stability, and productivity; ‘wild’ resources (species and elements) of natural habitats and landscapes that can provide services (e.g. pest control and ecosystem stability) to agriculture (Thrupp in Gold, 1999);

- **agroekologija** (agro-- (grč. agros = cultivated land) designating bond with a land, and is used for compounds formation and **ekologija** (ecology) (Biol.) the branch of biology concerned with the various relations of animals and plants to one another and to their surrounding environment. http://www.webster-dictionary.org/definition;
- **biokontrola** (bio- ‘a combining form meaning ‘life’ occurring in loanwords from Greek and used in the formation of compound words’ + control ‘prevention of the flourishing or spread of something undesirable’) is defined by language dictionaries as ‘the control of pests by interference with their ecological status, as by introducing a natural enemy or a pathogen into the environment’ (WEUDEL) or as ‘man’s use of a specially chosen living organism (predator, parasite, or disease) to control a particular pest (weeds, plant pathogens, vertebrates and insects)’ (Orr, in Gold, 1999); In agriculture context the word *control* is rendered as prevention and not control to observe something (Perković, 2011);

- **biodiverzitet** (bio- ‘a combining form meaning ‘life’ occurring in loanwords from Greek and used in the formation of compound words’ + diverzitet (engl. diversity) ECD;

- **biodinamika** biodynamics (< bio- ‘a combining form meaning ‘life’ occurring in loanwords from Greek and used in the formation of compound words’ + dynamics ‘the branch of mechanics that deals with the motion and equilibrium of systems under the action of forces, usually from outside the system’) is defined by language dictionaries as ‘the branch of biology dealing with energy or the activity of living organisms’ (WEUDEL) or as ‘a biodynamic method in which certain herbal preparations that guide the decomposition processes in manures and compost are central’ (1985-1986 Year End Report, in Gold 1999);

- **biotehnologija** biotechnology [1940-1945] (< bio- ‘a combining form meaning ‘life’ occurring in loanwords from Greek and used in the formation of compound words’ + technology ‘the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial art, engineering, applied science, and pure science’) is defined by language dictionaries as ‘the use of living organisms or other biological systems in the manufacture of drugs or other products or for environmental management, as in waste recycling (micro-organisms to degrade oil slicks or organic waste, genetically engineered bacteria to produce human hormones, and monoclonal antibodies to identify antigens). More recently, products such as plants engineered for herbicide tolerance or insect resistance, and bacteria engineered to produce drugs for livestock may point to reduced chemical use and other sustainable applications in agriculture (Gold, 1999);

- **biosigurnost** (bio- „a combining form meaning ‘life’ occurring in loanwords from Greek and used in the formation of compound words” + sigurnost (security)

- **bio vrt** (bio- „a combining form meaning ‘life’ occurring in loanwords from Greek and used in the formation of compound words” + vrt (garden);

- **biosigurnosne mjere** (bio- „a combining form meaning ‘life’ occurring in loanwords from Greek and used in the formation of compound words” “ + sigurnosne (security) + mjere (measures);

- **ekodizajn** (eko (eco- from the Greek for ‘house’, ‘household affairs’ [environment, habitat], ‘home’, ‘dwelling’; used in one extensive sense as environment). + dizajn (design) engl.design = lat. designare:označiti;

- **eko proizvodnja** (eko (eco- from the Greek for ‘house’, ‘household affairs’ [environment, habitat], ‘home’, ‘dwelling’; used in one extensive sense as environment)+ production;

- **eko poduzetnik** (eko (eco- from the Greek for ‘house’, ‘household affairs’ [environment, habitat], ‘home’, ‘dwelling’; used in one extensive sense as environment) + entrepreneur;
- no till (age) (<no ‘used before a noun to convey the opposite of the noun’s meaning’ + till (age) ‘the operation, practice, or art of tilling land’) is defined by language dictionaries as ‘the planting of crops by direct seeding without ploughing, using herbicides as necessary to control weeds’ (WEUDEL) or as ‘a specific type of conservation tillage (a broad range of soil tillage systems that leave residue cover on the soil surface, substantially reducing the effects of soil erosion from wind and water, minimising nutrient loss, decreased water storage capacity, crop damage, and decreased farmability, leaving the soil undisturbed from harvest to planting except for nutrient amendment, and accomplishing weed control primarily with herbicides, limited cultivation, and, in more sustainable systems, with cover crops’) (Perković and Rata, 2006);

- permakultura [late 1970s] (< perm(a)- ‘permanent’ + culture ‘the art or practice of cultivating the soil; tillage’) is defined as ‘an alternative sustainable agriculture system emphasising the location of each element in a landscape, and the evolution of landscape over time, and aiming at producing an efficient, low-maintenance integration of plants, animals, people and structure, etc., applied at the scale of a home garden, all the way through to a large farm’ (Perković and Rata, 2006).

There are three words formed by combining the elements no – and perma-. It is interesting that these elements behave as prefixoids although they still have not been attested like that in the dictionaries. As for the expressions consisting of two or more words English borrowings are always adjectives (rational, minimal, precision, regenerative etc.).

3.2. Possible Croatian replacements for anglicisms in the Croatian sustainable agriculture terminology. Permanent characteristic of the Croatian language is desire for pure Croatian words free from other unnecessary borrowed words. According to Muhvic-Dimanovski (1998) "dictionaries are concerned as the language standard guards whereas on the other hand they should be up-to-date recording new words”. Based upon the above mentioned, Croatian linguists try to find domestic replacements for the English loanwords. In this paper such replacements have been found in the Dictionary of Foreign Words (Anić-Goldstein, 2009). Prefixoids agro-, eco-, and bio- have been recently widespread in the Croatian language and worldwide since the awareness of food and environment safety.

- Ridge till (ridge till) - Obrada tla u grebenove
- Naturalna poljoprivreda (natural agriculture) – prirodna poljoprivreda
- permakultura (permaculture) - trajna kultura
- no tillage (No tillage)-izostavljanje obrade tla
- minimum tillage (minimum tillage) - minimalna obrada tla (working activities are reduced)
- strip tillage (strip tillage) - obrada u trake
- prirodni resursi (natural resources) - prirodni izvori.

**CONCLUSION**

Although there are many expressions relative to a sustainable agriculture their meaning encompasses: a) maintaining soil fertility, b) natural environment ability (plants, animals) in development optimisation, c) reducing (avoiding) artificial fertilizers,
pesticides and in general artificial regulators of growth and food additives, d) crop rotation importance (such as in our traditional farmer’s agriculture) (Cifrić, 2003). All these expressions have “very literal meanings that have been coloured by their historic use and practitioners’ experiences” (Perković and Rata, 2006). Many terms designating sustainable agriculture indicate that Croatian language has a tendency toward enriching its vocabulary looking for new words for naming new realities in agriculture, sustainable agriculture, in this case. A very important role in the coinages designating a sustainable agriculture has foreign origine prefixoids, mostly Latin and Greek (19) and expressions (24) consisting of two or more elements at least one of which is English borrowing. Finally, it is pointed out that loanwords (especially English ones being dominant in other languages) should be replaced, whenever possible, by domestic ones (one word or description) thereby contribute to Croatian standard language. To fulfil this aim, cooperation between agriculture specialists and linguists are inevitable.

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